



Transport
for NSW

NSW HEAVY VEHICLE ACCESS POLICY FRAMEWORK

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Author: Freight Industry Branch
Date: September 2018
Version: 1
Reference: ISBN: 978-1-925797-93-0
Division: Freight, Strategy and Planning
Review date: September 2019

EXECUTIVE SUMMARY

The Heavy Vehicle Access Policy Framework (Framework) updates the policy on access to the road network for modern high productivity vehicles (HPVs) (these are vehicles that can carry more payload than a B-double), road trains, other restricted access vehicles including those operating at Higher Mass Limits (HML) and double decker buses. It is a key action of the NSW Freight and Ports Plan 2018-2023.

Heavy vehicle operation is vital to the NSW economy through its role in delivering freight and carrying passengers within the state and across borders.

The NSW freight task is set to increase by 28 per cent between 2016 and 2036. The NSW road network carries over 60 per cent of the total NSW freight task, and NSW is a through state for freight transport travelling to Brisbane, Melbourne and Adelaide. As such, the role of heavy vehicles in moving freight across NSW is substantial and will continue to be so for the foreseeable future.

The B-double has been operating on NSW roads since the 1980s and is the most common mainstream high productivity freight vehicle configuration. With a rising freight task there will be more trucks on our roads. Modern safer Performance Based Standards (PBS) vehicles which can carry more freight will put downward pressure on the number of trucks in operation, leading to fewer trucks on the road than would otherwise be the case.

Increasingly, transport operators are investing in modern and safer high productivity vehicles such as PBS vehicles as an alternative to traditional combinations to safely and efficiently move freight. New combinations like PBS Level 2B A-doubles provide a substantial increase in payload capacity, in the order of a third depending on the load, for a 4 metre increase in length compared to a B-double. Similarly using PBS 3A equivalent vehicles, which are a further 6.5 metres longer, allows an extra 4 pallets to be moved compared to a 2B combination.

Against this backdrop, the existing road network is facing challenges (including network capacity and geometric constraints) that can hinder freight vehicle access and productivity. Network factors affecting heavy vehicle use include ageing infrastructure, safety and amenity concerns, and congestion issues (particularly on the urban road network and during peak hours), which continue to impact on the efficiency of the road freight task.

To achieve the NSW Government's objectives of ongoing productivity improvements for movement of freight, in the context of a growing road freight task, this Framework has been developed which sets out the vision for heavy vehicle (HV) access in NSW.

In a single document, the Framework clearly articulates current HV access policy, a vision for HV access for key regional freight corridors and the Sydney Greater Metropolitan Area (GMA), as well as interim policy settings to facilitate access.

The overarching policy objective is to create PBS networks with connectivity across the whole NSW road network to unlock freight productivity by enabling vehicles able to carry more freight to operate on existing equivalent vehicle networks. This will provide for the next generation of newer, safer and more productive vehicles on key freight corridors across NSW and in the Sydney Greater Metropolitan Area, while minimising the infrastructure upgrades required.

The policy objective is to achieve safe and efficient freight movements which also address community concerns of local amenity loss, network impacts and infrastructure constraints. It is envisaged that the policy outlined in the Framework will contribute to enhancing the community's understanding of the benefits to the

introduction of safer, more productive vehicles in an environment of an increasing freight task.

The Framework also emphasises the importance of collective action by road managers and industry in order to get the right focus on connectivity of the network which is critical to meet both industry and community needs. Transport for NSW (TfNSW) aims to use the policy as a basis to empower Local Government in carrying out complementary regional network planning and emphasises building regional (area-based) networks in partnership with local councils.

The benefits of this Framework are to:

- ✓ Provide a strategic planning approach to heavy vehicle access using the benefits of the national PBS scheme (enables vehicles of higher productivity and safety through 'innovative' vehicle design) and consistent with national initiatives.
- ✓ Provide clarity to industry thus allowing them to plan their transport operations and investment in new more productive vehicles
- ✓ Reduce red tape for industry by having a streamlined policy that promotes access on a network basis, rather than access via permits. This will assist NSW in achieving its national heavy vehicle access commitments
- ✓ Assist and encourage Road Managers (Roads and Maritime Services and local councils) to make timely access decisions consistent with Future Transport directions, and
- ✓ Provide a systematic basis for the future development of strategic freight networks (including TfNSW and Roads and Maritime corridor strategies) to inform investments by Road Managers. It should assist in identifying the need for freight-focused investment, or for programs of work for heavy vehicle access to maintain and enhance our state-wide productivity by identifying where the needs of freight vehicles are strongest.

The Framework identifies priority freight corridors combined with useable network connectivity and covers existing and new access arrangements for the following heavy vehicle types. The policy focuses on building a network for HPVs on key State Roads and also on connectivity to NSW Local and Regional Roads, or the "last mile". The primary focus is to develop a 30m PBS 2B network for access by Notice as these 30 metre vehicles provide up to a 30 per cent payload increase compared to B Doubles and generally fit on the current B Double network; including the Sydney Greater Metropolitan network and major NSW freight corridors.

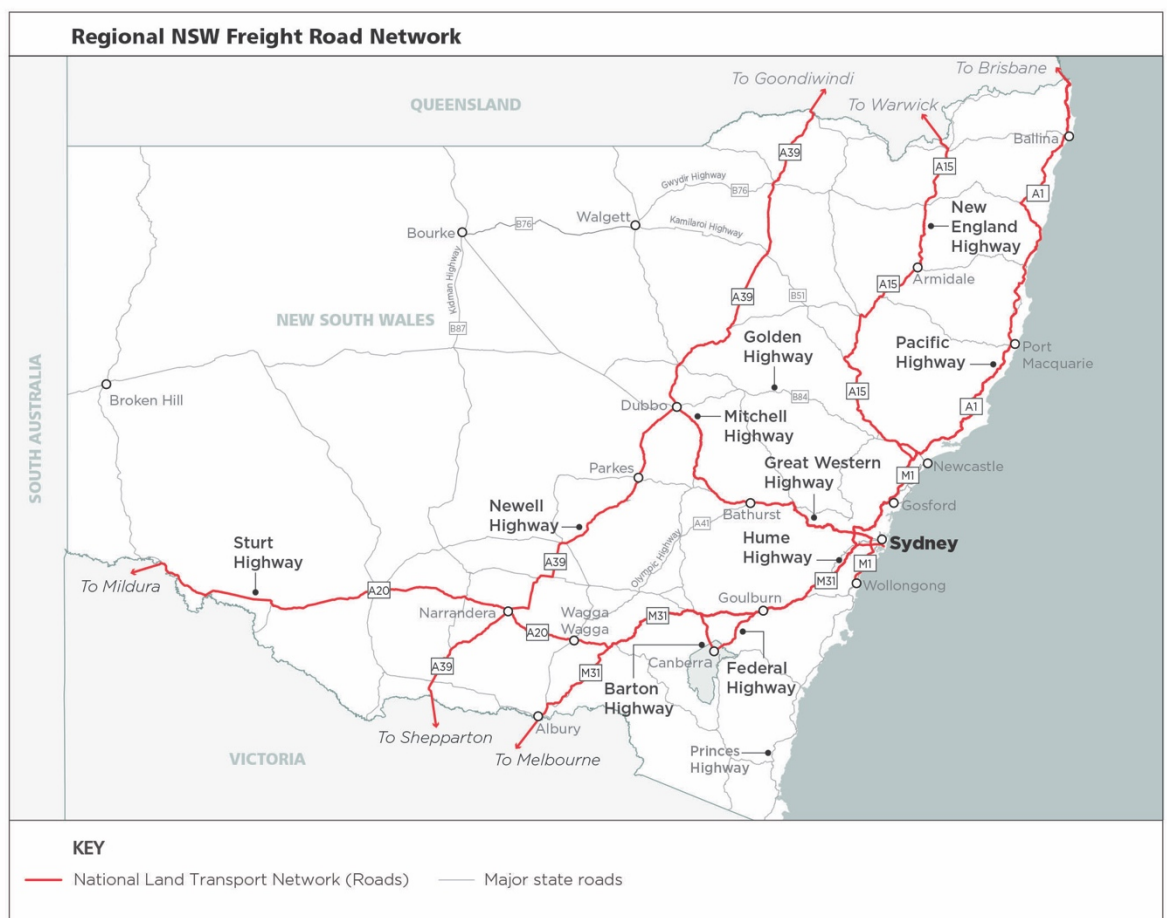
The Framework will also address access for other HPVs such as Modern Road Trains which meet the PBS level 3 standards along the Newell Highway and eventually a PBS 3A network east of the Newell Highway. The longer term vision is to build a 36.5 metre PBS 3A network on specific corridors (not including within the Sydney GMA) following broad community consultation. These vehicles would be able to carry a further 2 pallets per trailer compared to a PBS 2B combination. Access for these vehicles would require resolution of issues such as rest area capacity, longer passing lanes, and de-coupling areas to break down vehicles into smaller combinations where access to urban areas is required. As part of building a HPV network, a Higher Mass Limit (HML) network is also planned for Sydney to improve productivity. This will involve upgrading some bridges, particularly on Local Roads. A brief overview of the key policy outcomes is provided in Figure 1 – Key Policy Outcomes.

Figure 1. Key Policy Outcomes

High Productivity Vehicle/ location	Current Access policy	Stage 1 Access Policy (0 – 5 years)	Stage 2 Access Policy -Vision (5-10 years)
PBS Level 2B combinations			
Sydney GMA, Port Botany, Regional Priority Routes	Access by permit on a case by case basis. No dedicated network	<p>Access by permit including pre-approved permit</p> <p>Commence with Sydney Motorways and sections of Hume, Pacific and Golden Highways that are suitable, and supporting road networks.</p> <p>Build strategic metropolitan and regional networks with local councils/Joint Organisations</p>	<p>Access by gazetted as of right access (Notice) to PBS 2B State-wide network across Sydney GMA and the regional NSW road freight network (see Figure 2)</p> <p>With supporting road networks</p>
Modern HPVs - PBS Level 3A Vehicles, prescriptive B-triples, Modular B Triples operating at GML, and modern Type1 (A-double) road trains meeting PBS level 3 standards			
On the Newell	Access by permit and notice to some sections of Newell Highway	Access by permit and notice to additional sections of the Newell Highway as infrastructure upgrades are completed, and supporting road networks	Access by notice to whole length of Newell Highway and supporting road networks.
East of the Newell	Access by Permit and Notice to approved roads only; no dedicated network	Access by Permit including pre-approved permit and Notice on a case-by-case basis while network finalised	<p>Access by Permit and Notice</p> <p>PBS Level 3A Network on freight routes not including within Sydney GMA, following community consultation and resolution of issues such as rest area capacity, longer passing lanes, and de-coupling areas to break down vehicles into smaller combinations where access to urban areas is required.</p>
West of the Newell	Access by Notice to Road Train network	Access: status quo	Access: status quo

High Productivity Vehicle/ location	Current Access policy	Stage 1 Access Policy (0 – 5 years)	Stage 2 Access Policy -Vision (5-10 years)
Buses in Sydney	Facilitate higher productivity buses during peak times on current network	Improved efficiency of double decker buses in the Sydney GMA by allowing increased mass limits	Improved efficiency of double decker buses in the Sydney GMA by allowing increased mass limits

Figure 2. Map showing Regional NSW Freight Road Network (Major State Roads and National Land Transport Network)



PART A – POLICY CONTEXT AND STRATEGIC SETTINGS

1 INTRODUCTION

1.1 Purpose

Heavy vehicle operation is an industry that is vital within NSW to support economic growth through freight delivery and passenger transport.

A key to supporting improved safety and productivity is providing certainty to industry so they can invest in modern safer, more efficient vehicles meeting performance based standards (PBS) and opening up the NSW road network to support safe, efficient and sustainable freight and transport outcomes.

This Framework outlines a strategic, staged approach to heavy vehicle access in NSW for both state and council roads. The Heavy Vehicle Access Framework has three main parts which are briefly outlined below:

Part A sets out the underpinning objectives and strategic settings for the Framework. The strategic priorities for opening access on regional and key road freight routes and the Sydney Greater Metropolitan Area (GMA) and Ports is also outlined.

Part B applies the Framework to the NSW road network outlined in Part A, to provide a vision for future heavy vehicle access in NSW, including priorities on strategic regional routes and in metropolitan areas. An overview of the current access policy, a vision for access policy, and an interim policy approach is also given for different vehicle types.

Part C sets out a high level implementation plan for achieving additional heavy vehicle access. The implementation of this policy will commence immediately. A 2-step evaluation approach will involve an initial qualitative review of the effectiveness of the Framework and governance arrangements, and as an evidence base is established an outcomes evaluation will be developed in the longer term.

A considered, strategic approach to opening heavy vehicle access will help to ensure that NSW can safely and efficiently meet the freight task in the context of:

- growing freight demand, particularly non-bulk freight;
- national harmonisation of access through regulation;
- NSW Government transport strategic plans;
- changes to the heavy vehicle fleet, such as safety improvements, increases to the size and mass of heavy vehicles;
- current and emerging technology and innovation;
- ongoing costs of maintaining road infrastructure assets; and
- urban network congestion.

This Framework outlines the NSW policy settings for the current heavy vehicle fleet, as well as new and emerging vehicles with increased payload capacity and higher performance and safety standards (i.e. PBS vehicles), in order to more safely and efficiently meet the freight task.

Based on key principles and the objects of the Heavy Vehicle National Law (HVNL), this policy outlines overarching policy objectives for access. The policy vision, particularly to accommodate newer, safer and more productive vehicles, is a network

of key freight corridors across regional NSW and in the Sydney Greater Metropolitan Area.

In providing the strategic priorities for heavy vehicle access in NSW, this Framework can inform the securing and prioritising of investment in freight network efficiency, safety, capacity and sustainability. It should assist in identifying the need for freight-focused investment, or for programs of work for heavy vehicle access. Our state-wide productivity will be maintained and enhanced through the identification of network constraints and prioritisation of investment according to where the needs of freight vehicles are strongest.¹ This includes TfNSW and Roads and Maritime Corridor Strategies where infrastructure priorities for HPVs can now be guided by strategic access priorities.

What are the benefits of this Framework?

- Provides a strategic planning approach to heavy vehicle access using the benefits of the national PBS scheme (enables vehicles of higher productivity and safety through 'innovative' vehicle design) and consistent with national initiatives
- Provides clarity to industry thus allowing them to plan their transport operations and investment in new more productive vehicles
- Reduces red tape for industry by having a streamlined policy that promotes access on a network basis, rather than access via permits. This will assist NSW in achieving its national heavy vehicle access commitments
- Assists and encourages Road Managers (Roads and Maritime and local councils) to make timely access decisions consistent with Future Transport 2056 directions, and
- Provides a systematic basis for the future development of strategic freight networks (including TfNSW and Roads and Maritime corridor strategies) to inform investments by Road Managers. It should assist in identifying the need for freight-focused investment, or for programs of work for heavy vehicle access to maintain and enhance our state-wide productivity by identifying where the needs of freight vehicles are strongest.

1.2 Policy Context

This section outlines the broader policy context for this heavy vehicle access policy.

Heavy Vehicles and the growing road freight task

Freight logistics is an enabler of almost all economic activity in NSW. The NSW freight task is set to increase by 28 per cent between 2016 and 2036 as set out in the [NSW Freight and Ports Plan 2018-2023](#). The efficient performance of the NSW freight network will have a direct bearing on the transport and other costs for goods and raw products, and on the competitiveness and productivity of NSW.

The NSW road network carried around 60 per cent of the total freight task in 2016. The types of freight carried by road range from agricultural commodities to mining products, building and construction materials and containerised freight.

The role of heavy vehicles in moving freight across NSW, particularly between key freight sites, is substantial and will continue to be so for the foreseeable future.

¹ The NSW and Commonwealth Governments have committed to a number of funding programs, including NSW Fixing Country Roads, NSW Bridges for the Bush Program, Commonwealth Heavy Vehicle Safety and Productivity Programme and Bridges Renewal Programme, for priority investment in road infrastructure projects of significance to the freight task.

Provision of a streamlined policy that promotes access on a network basis for heavy vehicles is crucial for accommodating the future freight task and supporting the economic growth of the state.

National Context for Heavy Vehicle Regulation, access and pricing

National harmonisation of heavy vehicle access is also a key cornerstone of the Heavy Vehicle National Law (HVNL), which commenced in February 2014 in Queensland, New South Wales, Victoria, South Australia, Tasmania and the Australian Capital Territory. The National Heavy Vehicle Regulator (NHVR) coordinates access decisions at the national level to minimise and make consistent any conditions placed on access.

The onus is on jurisdictions to facilitate harmonised access for heavy vehicles within their jurisdiction and across borders. The provision of clear policies and networks should support road managers' access considerations and decisions within the bounds of the HVNL. TfNSW provides the policy setting, and road managers (Roads and Maritime and local councils) determine access under HVNL.

The NHVR sets out strategic directions² including a productivity goal to maximise the economic value of heavy vehicle activity by facilitating better, more efficient ways for participants in the heavy vehicle industry to undertake their activities.

Infrastructure Australia's [Australian Infrastructure Plan](#) emphasises the need to deliver efficient infrastructure to better connect our freight and logistics supply chains ensuring that goods are moved efficiently and reliably. NSW currently has a number of high priority projects recognised in the plan that facilitate more efficient and sustainable use of the NSW infrastructure including, development of the intermodal terminals and motorway networks.

NSW Government transport strategic plans

[Future Transport 2056](#) is an update of NSW's Long Term Transport Master Plan. It is a suite of strategies and plans for transport developed in concert with the Greater Sydney Commission's [Sydney Region Plan](#), Infrastructure NSW's [State Infrastructure Strategy](#), and the Department of Planning and Environment's [Regional Growth Plans](#), to provide an integrated vision for the state.

The Future Transport Strategy sets the 40 year vision, directions and outcomes framework for customer mobility in NSW, which will guide transport investment over the longer term. It will be delivered through a series of supporting plans, including the NSW Road Safety Plan 2021 and the NSW Freight and Ports Plan 2018-2023. The Freight and Ports Plan was released in September 2018 and is a call to action for government and industry to collaborate on clear initiatives and targets to make the NSW freight task more efficient and safe so NSW can continue to move and grow.

The Framework aligns with and supports Future Transport 2056 and the NSW Freight and Ports Plan 2018-2023.

The Framework is also consistent with the recently released Joint Standing Committee on Road Safety (Staysafe) report on [Heavy Vehicle Safety and Use of Technology to Improve Road Safety](#).

Staysafe examined the range of technologies available to manage heavy vehicle safety, and the potential of technology to make a greater contribution in the future. It considered how to encourage industry take-up of new technologies, and the regulatory framework and other measures most likely to encourage early take-up and better safety outcomes. The report made eight recommendations, which will be

² National Heavy Vehicle Regulator (2016) Strategic Directions

applicable to the Framework including adoption of safety technology and the use of telematics.

Local government policy perspective

Local Government acknowledges the importance of freight transport for productivity and economic development in national, regional and local contexts.³ Councils in particular are looking for guidance from other levels of government to better inform their own asset management and infrastructure investment priorities, especially given the limited funding currently available for these programs.

Local council engagement in heavy vehicle access policy and priority freight corridors is vital to achieving heavy vehicle access gains. Local councils currently manage approximately 90 per cent of the NSW road network. Most freight journeys start or finish on Local Roads.

Consultation with councils is essential to address any road safety, noise or amenity concerns local communities have with the opening up of more Local Roads to higher productivity vehicles. Councils are also concerned about covering the costs of improving and maintaining Local Road networks and the resources required to collect data to make access decisions.

However, Councils are cognisant of the benefits of higher productivity vehicles and the increased use of these vehicles can reduce the number of heavy vehicle movements and overall pavement wear, which benefits the local community.

Heavy Vehicle Fleet and newer, safer and more productive heavy vehicles

Improvements to vehicle efficiency, for example increased payloads are a key lever for productivity growth.

Traditionally heavy vehicles were only allowed to run on the road if they met the standards and conditions set out in the Road Transport Regulations. Heavy Vehicle combinations like semi-trailers, B doubles and road trains were specified in this manner. Vehicles either comply or they don't with the conditions set down. These are the standard heavy vehicles seen on the road at present.

In the 1990s, efficiency improvements were achieved through the use of B-doubles. As a result the composition of the NSW fleet has changed. Currently, the majority of the freight task is conducted by semi-trailers and B-doubles, with some contributions by rigid trucks, truck and dog combinations, road trains, B-triples, and AB-triples.

With the pressure to improve productivity, industry has been investing in the use of highly innovative and safer PBS vehicles that can contribute to productivity.⁴ These are new generation HPVs capable of carrying a greater payload than a B-Double, which is currently the primary road freight vehicle.

The PBS Scheme was developed in 2007 to provide a different approach to developing heavy vehicles better able to meet the demands of the growing freight task. It involves vehicles having to meet 16 safety and performance standards and 4 infrastructure standards to be given the appropriate level of access on the road network. Vehicles must also be fitted with, at least, a Euro 4 diesel engine to reduce harmful emissions, noise and improve fuel efficiency.

The PBS process has led to the development of new combinations like the 30m PBS Level 2B A-doubles and B-doubles (including those with quad axle groups) which are up to 30 metres long and able to carry two 40-foot containers. They provide a substantial increase in vehicle payload capacity, of the order of a third depending on

³ LGNSW Submission on the then draft NSW Freight and Ports Plan (2018).

⁴ Bureau of Infrastructure, Transport and Regional Economics (2011). Truck productivity: sources, trends and future prospects, Report 123, Canberra ACT

the nature of the load. This is a major increase in productivity for a four metre increase in length. These newer vehicles also have the latest design and safety, for example trailer roll stability, Anti-lock Braking System (ABS), and front, side and rear underrun protective devices. Some vehicles also have autonomous emergency braking and lane departure warning.

PBS has changed the way in which access for new vehicles is considered. Whether new combinations are going to be approved using the PBS process or as prescriptive vehicles, all vehicle performance is now being assessed against the PBS standards. The end result is that new heavy vehicle combinations will be safer, better performing and have reduced environmental impact compared to the current heavy vehicle fleet while at the same time offering increased economic efficiency.

Increasing use of PBS vehicles (or vehicles that meet the PBS Standards) can be expected to lead to significant productivity and efficiency gains for industry through better access and higher mass limits afforded to these vehicles. The shift to the use of PBS vehicles should also benefit road managers and the community through enhanced safety associated with these modern vehicles and fewer overall truck movements on the road network for a given freight task.

The use of PBS vehicles is also expected to minimise impact on road pavement, compared to the current fleet, depending on the masses vehicles are permitted to operate at. This is because, like vehicles operating at HML, PBS vehicles are fitted with certified road friendly suspension (RFS) systems which act as more effective shock absorbers and also have a reduced impact on pavements on a task basis.

Further detail of benefits of high productivity vehicles is outlined in an Austroads study which attempted to quantify the direct benefits (e.g. safety, productivity, fuel and environmental) and indirect benefits (stimulated economic flow-on, lowering community freight exposure and slightly lowering infrastructure maintenance costs) of high productivity vehicles in Australia.

Around 15 operators have been permitted limited use of PBS 2B vehicles on the Sydney motorway network and around Port Botany over the last 3 years. No incidents have been reported. Modelling has estimated reductions in kilometres travelled by up to 32% and reductions in CO2 emissions by up to 22% compared to B-doubles.⁵

In late 2017, the National Transport Commission (NTC) assessed the effectiveness of the PBS scheme, as well as the impacts of government intervention and blueprinting of PBS designs, to find new ways of improving the scheme. Feedback from existing PBS customers and government authorities suggests there may be worthwhile improvements to the PBS scheme. The NTC is currently developing an implementation plan and future work on the PBS Scheme is planned.

The NTC's 2018 *Reforming the Performance-Based Standards* scheme Policy paper⁵ confirmed that PBS vehicles are more productive than comparable conventional vehicles, finding improvements ranging from 15 per cent for the transport of cars and groceries to over 30 per cent for the transport of general freight and containers

This report discussed the overall benefits of HPVs in Australia and found:

- There are significant cost savings to operators, industry and the community for each TEU transferred from smaller trucks to HPVs. By 2034 it is estimated that truck operators will save \$17.2 billion in cost savings using PBS vehicles;
- If 20 per cent of articulated and B-double trucks carrying cubic freight convert to HPV it will reduce 20,000 trips per year. From 2014 – 2016 PBS vehicles saved about 440 million kilometres in road mileage. By 2034 PBS vehicles are estimated

⁵ Austroads (2014) Quantifying the Benefits of High Productivity Vehicles. Research Report AP-R465-14.

to exceed this saving reducing 8.9 billion kilometres of heavy vehicle travel (based on a 7 per cent growth rate); and

- Fuel consumption savings - PBS vehicles can save millions of litres of fuel consumption reducing CO2 emissions. In 2016, use of PBS vehicles reduced the need for fuel to deliver Australia's road freight task by 94 million litres, and resultant CO2 emissions by 250,000 tonnes. By 2034 PBS vehicles would save 3.2 billion litres of fuel and 8.7 million tonnes of CO2 emissions.

Emerging transport and road technologies such as automated and connected vehicles (vehicle to vehicle and vehicle to infrastructure communication) create significant opportunities to further improve heavy vehicle productivity. Successful adoptions of new technologies will accelerate improvements to network capacity and efficiency while at the same time contributing to safety and amenity improvements.

TfNSW's [Future Transport Technology Roadmap](#), published in 2017 recognises the importance of technology to freight and that freight principally operates on shared transport networks. The intent of the Roadmap is to ensure that each of the 'no-regrets,' next steps initiatives deliver benefits and outcomes for both personal mobility and freight where it is relevant.

The Joint Standing Committee on Road Safety (Staysafe) report on Heavy Vehicle Safety and Use of Technology to Improve Road Safety also examines a range of technologies available to manage heavy vehicle safety and the potential of technology to make a greater contribution in the future.

There are numerous vehicle safety technologies available now and emerging for heavy vehicles, such as crash avoidance technology for example autonomous emergency braking, lane departure warning systems and fatigue warning systems.⁶

Recent projects highlight the possibilities for using new technologies to improve heavy vehicle productivity into the near future:

- The Cooperative Intelligent Transport Systems (CITS) project is a joint initiative between TfNSW, National ICT Australia (NICTA) and the Australian Government. Led by the NSW Centre for Road Safety, this involves 58 heavy vehicles servicing Port Kembla at three traffic light locations. This allows heavy vehicle drivers to receive safety messages about upcoming hazards and potential crashes. The messages come via technology attached to other vehicles, as well as structures such as traffic signals. Drivers received messages warning of intersection collisions, forward collision danger, heavy braking ahead, traffic signal phase and speed limits. This project has clear road safety benefits, as well as flow on effects for freight efficiency and congestion busting. Figure 3 provides a pictorial illustration of the CITS project in the Illawarra.
- The COHDA project (Premier's Innovation Initiative) is a Freight Signal Priority Proof-of-Concept project to trial new technology to optimise traffic signal timing to reduce travel time for heavy freight vehicles. The trial runs across 40kms of important freight routes and includes more than 100 heavy vehicles.
- Truck platooning – small convoys of automated freight vehicles using electronic coupling - is also an extremely promising innovation. The second or third truck in the platoon follows at a very close distance and automatically replicates the actions of the driver in front: braking, accelerating, steering. This truck platooning has the potential to improve road safety, lower costs, reduce fuel consumption and CO2 emissions, and optimize road capacity under suitable conditions. In the Netherlands, the technology is already sufficiently advanced to enable large-scale

⁶ See Centre for Road Safety (2014) Safety technologies for Heavy Vehicles and Combinations, <http://roadsafety.transport.nsw.gov.au/downloads/safety-technologies-heavy-vehicles.pdf> and Budd and Newstead (2014) Potential Safety benefits of Emerging Crash Avoidance Technologies in Australasian Heavy Vehicles. MUARC Report 324, <http://www.monash.edu/muarc/research/our-publications/muarc324>. National Transport Commission (2018) Reforming the Performance-Based Standards Scheme Policy Paper

cross-border trials to be conducted in real world motorway traffic conditions in 2016.⁷

TfNSW has established a Smart Innovation Centre – a Centre for collaborative research and development of safe and efficient emerging transport technology, including connected and automated vehicles and intelligent transport systems.

Figure 3. The Cooperative Intelligent Transport Systems (CITS) project in the Illawarra allows communication between vehicles and infrastructure. (Source: John Wall)



Community

Many local communities, especially in urban contexts, have concerns about the effect increased numbers, dimensions and mass of heavy vehicles will have on their area, particularly regarding Local Road safety and amenity. This community concern may not reflect the benefits of modern and safe PBS vehicles.

It is envisaged that the policy outlined in the Framework will contribute to enhancing the community's understanding of the benefits to the introduction of safer, more productive, more sustainable vehicles in an environment of an increasing freight task.

⁷ See TNO for further information. <https://www.tno.nl/en/about-tno/news/2016/4/vision-truck-platooning-2025/>

2 POLICY SCOPE

Types of Heavy vehicles within the scope of the Framework

Given the clear benefits of high productivity vehicles, this Framework focuses on opening access to high productivity vehicles, with a focus on PBS and prescriptive types of high productivity vehicles. It also applies to all restricted access heavy vehicles and PBS combinations, and buses operating in NSW.

The following types of vehicles are included in this policy:

- All Class 2 access freight vehicles up to the size and mass of a 26m B-double, including those operating at Higher Mass Limits
- 'Traditional' Type 1 (A-double) road train with a total length not exceeding 36.5m
- Traditional Type 2 (A-triple) road train with a total length not exceeding 53.5m
- Modern Type 1 (A-double) road train with a total length not exceeding 36.5m
- Modern Type 2 (A-triple) road train with a total length not exceeding 53.5m
- Modular B-triple with a total length not exceeding 35m
- B-triple with a total length not exceeding 36.5m
- AB-triple triple with a total length not exceeding 36.5m
- AAB quad road train with a total length not exceeding 53.5m
- BAB quad road train with a total length not exceeding 53.5m
- PBS Level 2B A-double combinations
- PBS Level 2B B-double combinations (with or without a quad axle group)
- PBS Level 3A B-double combinations (with or without a quad axle group)
- Double decker buses.

Further detail on the type of vehicles covered by this policy is provided in Appendix A.

Policy issues not in scope in this document

This policy document outlines a vision for expanding access for specified heavy vehicles on key routes and within regions, and a road map for implementation. It supports the Freight and Ports Plan, in particular the priority to increase access for freight across the road network. Detailed policy implementation planning is outside the scope of this document. Further evidence to support investments in infrastructure improvements and the application of other operating conditions will be vital to expanding access.

There are a number of funding options now open to local councils for assessment of and investment in infrastructure (e.g. [Federal Roads to Recovery](#) and TfNSW [Fixing Country Roads](#) programs). However, funding options for infrastructure investments to improve access is outside the scope of this policy.⁸

⁸ It is also noted that at the national level, there has been significant attention on road pricing reform, see Productivity Commission Public Infrastructure Inquiry (2014), Harper Competition Review (2015), Infrastructure Australia Plan (2016).

3 OVERALL POLICY OBJECTIVES FOR HEAVY VEHICLE ACCESS IN NSW

3.1 Overview

The overarching aim of the Framework is to achieve safe and efficient movement of road freight in NSW now and into the future, consistent with the overarching policy objectives for freight.

The national overarching objectives for heavy vehicle productivity highlight complexities involved in opening heavy vehicle access. Heavy vehicle access needs to consider industry productivity, safety, public amenity, as well as road infrastructure and environmental impacts such that:

- Public safety is ensured so any significant risks to road safety are identified and addressed.
- Public amenity is considered to minimise adverse effects on the community from impacts such as road congestion in urban areas.
- Infrastructure impacts are understood and assessed to determine the feasibility of investments to address any deficiencies in the road network (including bridges and pavement wear) and maintenance.

Road freight access should also be considered in a holistic context so that the efficient movement of freight across modes is not compromised.

The policy objective is to achieve safe and efficient freight movements which also address community concerns of local amenity issues, network impacts and infrastructure constraints. It follows that access decisions need to be evidence based, consistent and transparent.

Implementing these access policy objectives in specific policy settings (see Part B and Part C) to expand access will follow a staged approach with interim policy settings put in place while evidence is gathered to understand the issues. Evidence may then be used to expand access for high productivity vehicles, for example to support investment in bridge infrastructure, or to introduce operating conditions that reduce safety risks or reduce road congestion and improve amenity.

3.2 National regulatory framework and guidance

The objects of the Heavy Vehicle National Law (HVNL) set a clear vision that serves as guiding policy principles for NSW heavy vehicle access policy. The national overarching objectives are to establish a national scheme to facilitate and regulate the use of heavy vehicles on roads in a way that:

- promotes public safety;
- manages the impact of heavy vehicles on the environment, road infrastructure and public amenity;
- promotes industry productivity and efficiency in the road transport of goods and passengers by heavy vehicles; and
- encourages and promotes productive, efficient, innovative and safe business practices.

Each of these objectives interacts and need to be applied in concert to achieve safe, productive and sustainable road freight outcomes.

The productivity goal given in the NHVR's Strategic Directions document outlines a range of targeted actions including:

- Ensure a simple, consistent, transparent and efficient national access management system.
- Integrate demand, infrastructure conditions and vehicle performance into access decisions.
- Optimise access for high productivity vehicles and reduce the need for permits for low-risk vehicles.
- Continuously review and update the regulatory framework to ensure consistency and support the uptake of innovative technology.

3.3 Safety

As outlined in the NSW Road Safety Plan 2021, the NSW Government is committed to save lives and reduce injuries on NSW roads, improving road safety for the community by taking a Safe Systems approach.⁹ This approach takes a holistic view of the road transport system and the interactions among the key components of that system – the road user, the roads and roadsides, the vehicle and travel speeds. Technology has an important role to play in ensuring safety and the Staysafe Committee recently released a report on heavy vehicle safety technologies.

While heavy vehicles make up only 2.5 per cent of NSW motor vehicle registrations and 9 per cent of kilometres travelled by all NSW vehicles, heavy vehicles are involved in about 22 per cent of all road fatalities (2017 provisional) and 7 per cent of serious injuries (2016). Crashes involving heavy vehicles are often serious because of their size and weight, regardless of who is at fault.

In multi-vehicle fatal heavy vehicle crashes during the period 2013 to 2017p, heavy vehicles accounted for 27 per cent of the “key” vehicles involved in these crashes. The key vehicle is the vehicle identified as the vehicle movement largely contributing to the crash, though the key vehicle is not necessarily deemed to be at fault. In contrast, in multi-vehicle casualty heavy vehicle crashes over the same period, heavy vehicles accounted for 62 per cent of the “key” vehicles involved in these crashes.

The disparity in these percentages of heavy vehicle deemed to be the key vehicle is explained by the differing nature of fatal and casualty crashes. Fatal crashes are more likely to involve head on crashes (generally where another vehicle has crossed the road and collided with the heavy vehicle). In contrast, casualty crashes involving a heavy vehicle are more likely to occur at intersections, involve turning side swipe, lane side swipe crashes and rear end crashes – all of these crashes have a tendency for the heavy vehicle to be deemed the key vehicle.

Crash data does not provide information about whether or not the heavy vehicle involved in a crash was a PBS vehicle. The best available data regarding PBS vehicle involvement in crashes is insurance repair cost data. Insurance repair costs for major-crashes are a value greater than \$50,000 ranging to several million dollars. The National Transport Commission (2017)² reported that accident insurance repair costs data show that the major-crash involvement rate of PBS vehicles is 46 per cent lower per kilometre travelled than for comparable freight vehicles. The report recognises that this data does not include all fatalities (such as trucks hitting pedestrians or motorcycles) and may distort the reported benefits.¹⁰

PBS vehicles are tested against 16 safety standards and four infrastructure standards to ensure they fit the existing road network and how the vehicle performs on the road,

⁹ www.towardszero.nsw.gov.au/roadsafetyplan

¹⁰ Austroads (2014) Quantifying the Benefits of High Productivity Vehicles. Research Report AP-R465-14.

by assessing the particular vehicle design against safe measures, rather than assessing a vehicle based on prescriptive limits. For example, these measures include the vehicle's dynamic performance at low speed and the rearward amplification measuring the whip crack effect of a lane change manoeuvre at high speed.

Therefore, when considering heavy vehicle access, road managers must consider if there are significant risks to public safety by taking into account the principles underpinning the Safe Systems approach. This includes the vehicle's ability to interact safely with the surrounding traffic and infrastructure and the speed at which the vehicle can safely operate. Road factors include consideration of the outcomes of any road crash investigations reports, road safety audits and road safety assessment tools on relevant roads and routes. Safe interaction with other infrastructure, such as rail level crossings, should also be considered.

Industry is continually developing new safety features such as electronic stability control and lane departure systems. It is important that this technology is adopted as soon as practicable by heavy vehicles. Under the HVNL vehicle features are the responsibility of the NHVR although NSW may nominate desired safety features.

Behavioural risks such as driver fatigue risks and management may also be considered as conditions of travel for particular freight movements. A holistic approach to fatigue includes a range of solutions across driver behaviour, fatigue and safety management systems, and availability and accessibility of roadside infrastructure and rest areas to cater for future vehicle lengths.

3.4 Public Amenity

"Public amenity" is not defined in the HVNL. Under the NHVR Guidelines for granting access, public amenity considerations include noise, emissions, road congestion or dust imposing adverse effects on the community.¹¹

The NHVR Guidelines state:

"When deciding whether to consent to a grant of a period permit or notice consideration may be given to the existing and forecast traffic volumes and mix of traffic. The potential for the use of the restricted access vehicle to block traffic or otherwise cause traffic congestion due to the vehicle's size speed of travel or use of pilot and escort vehicles may also be considered by the road manager. However where possible the road manager must seek to mitigate this risk by imposing travel conditions about the time of operation of the restricted access vehicle. It may also be possible to mitigate through the use of an alternative route." (p.23)

No specific guidelines have been developed on how congestion issues may be approached, although it is a significant issue on urban road networks such as the Sydney arterial road network.¹² Based on current trends, if not addressed, congestion will continue to increase, imposing burdens on those living in Australian cities, those seeking to move goods through Australian cities and to the national economy. Particular constraints on motorways and highways will emerge, constraining productivity within cities and regions. High capacity corridors frequently also serve as major freight routes, which opens discussion of different priorities for private and commercial transport modes along key corridors at specific times of day. Advances in

¹¹ NHVR Approved Guidelines for Granting Access (2014).

¹² Infrastructure Australia Audit 2015 noted that seven of the eight most congested corridors in Australia are in Sydney and by 2031 the demand on these corridors is projected to significantly exceed capacity.

technology provide a platform for implementing such approaches (for example the COHDA proof-of-concept project, see Section 1.2).

As congestion is a major issue to consider for road users in the Sydney Greater Metropolitan Area this is an important issue in determining heavy vehicle access. A review of previous studies by Austroads was used to identify potential risks associated with heavy vehicles on congested urban roads. Key areas to consider were potential to exacerbate congestion delay, crash risks for vulnerable road users and reduced amenity, balanced against a reduction in truck movements and emissions. The Austroads modelling on King Georges Road also undertaken as part of this work indicated that currently the truck share is too low for HPVs to cause any noticeable impact on the network.¹³ However, as the number of vehicles using the roads and the expected number of HPV movements increase, then network performance does degrade. This was compared with performance for motorways where the impact in saturated conditions was likely to be a non-factor. This suggests that the benefits of HPVs are optimal on the motorway network.

Future Transport 2056 contains a Movement and Place Framework that provides a tool to manage the road network in a way that supports safe, efficient and reliable journeys for people and freight while enhancing the liveability and amenity of places. The framework guides specific corridor and place plans to be developed as supporting plans of Future Transport 2056. This framework will inform the implementation plan for the Framework.

For example, road and travel conditions should be considered in access decisions in urban areas. Further research on the benefits of a range of options such as restricting truck access in peak use periods; truck access restricted to a single lane; connected technology (vehicle to infrastructure) so that trucks communicate with traffic signals to allow a path through lights to reduce the number of heavy vehicles at the front of queues at lights; and improving truck performance (particularly acceleration) will inform access decisions.

Community concerns

A review of community attitudinal research conducted by the Commonwealth Department of Infrastructure and Regional Development,¹⁴ found that typically the Australian public has low levels of awareness and understanding of freight and the freight industry, and very little interest in learning more. Trucks represent freight for most Australians, and are typically of only minor concern, including as a road safety issue. However, communities are acutely interested in freight issues when directly affected by negative impacts of freight.

Local government has also highlighted that improving freight efficiency, while a sound macro-economic policy, does not always provide optimum outcomes for local communities, both from infrastructure impact and road safety/amenity perspectives.¹⁵ Many local communities, especially in urban contexts, have concerns at the effect of increased numbers, dimension and mass of heavy vehicles, especially local road safety and amenity issues. The concerns are both real and perceived.

Local government has noted that the community impact concerns are also relevant to the span-of-hours/curfew issue. In many council areas, some types of development such as shopping centres and industrial areas may have had span-of-hours restrictions placed on them at the time of approval owing to negative impacts, especially noise, on adjacent residential areas. Any relaxation of these controls would be subject to the consideration of the impacts on adjacent sensitive residential areas,

¹³ Austroads Modelling for High Productivity Vehicles in Metropolitan Areas (2018)

¹⁴ Commonwealth Department of Infrastructure and Regional Development. (2014) Surface Transport Policy. Community engagement on freight issues Case study compendium

¹⁵ LGNSW Submission on the draft NSW Freight and Ports Plan (2018).

including consultation with these affected communities. In some locations, specific measures aimed at decreasing noise impacts, for example use of quieter vehicles, redesigned or repositioned loading docks, and changed driver work practices may enable an expansion of access. Again, while economic efficiency arguments may support the overall expansion of freight transport into a 24/7 task, councils are required to uphold the amenity of its constituency in these considerations.

TfNSW envisages that the key policy outcomes outlined in the Framework around encouraging the greater use of HPVs will contribute to enhancing the community's understanding of the benefits to the introduction of safer, more productive PBS vehicles in an environment of an increasing freight task.

3.5 Road infrastructure

The NSW road network has been designed over time to meet the needs of semi-trailers and B-doubles. As a result, parts of the NSW road network are constrained in trying to meet the access demands for freight movements of larger vehicles such as HPVs. Road network characteristics that impact on HPV access include:

- Strength and design capacity of ageing bridges;
- Condition and strength of road pavements;
- Road geometry, width, grades and intersection layouts;
- Provision of rest areas and decoupling sites; and
- Suitable and sufficient opportunities for overtaking longer vehicles.

In addition, a key infrastructure issue for HPVs is the requirement for more space when cornering and negotiating intersections. They also require bigger rest and break down areas. Many parts of the road network, particularly east of the Newell Highway, were not designed for vehicles of HPV dimensions. Key roads would need to be upgraded and suitable amenity facilities provided to accommodate them.

In an effort to identify strategic deficiencies and/or gaps in current network so as to inform funding for maintenance and major project developments, TfNSW and Roads and Maritime in partnership have developed a number of road corridor strategies for the State Road network. The strategies are aimed to improve advice provided to the NSW Government about short, medium and long term investment priorities, specifically addressing road safety, traffic, freight access and asset condition issues over a 20 year period. Corridor strategies have been prepared for key freight routes in NSW, including the Newell Highway, the Golden Highway, Gocup Road, Princes Highway and the Oxley Highway Corridor Strategy.¹⁶ Work is in progress to develop strategies for all other key freight corridors in NSW. These freight corridor strategies will support the visions articulated in the Framework.

It is noted that Councils have limited resources, both financial and professional, to perform the often complex technical infrastructure assessment processes necessary for any route assessment task. LGNSW reports that it is not uncommon for HPV route applications to be declined because councils are unable either technically or financially to assess the impact of a particular vehicle configuration on a vulnerable component of their Local Road network, especially bridge infrastructure, where the load-bearing capacity may be unknown. The Framework provides an opportunity to engage with councils to enhance freight connectivity on the Local Road network.

¹⁶ See Austroads (2011) Pavement Wear Assessment Method for PBS vehicles.

Bridge assessments

A significant concern in providing access for vehicles operating at HML is the ability of bridges and long culverts to accommodate the higher masses for a combination which already has access to a route.

Limited bridge capacity can significantly impede transport efficiency, an issue that is prominent in NSW because of the high incidence of ageing bridge infrastructure. Funding in bridge strengthening and replacements will be critical to improving HPV access.

Bridge assessments are also a critical determinant for access for mass constrained loads, but require specialist engineering review. Work is proceeding at a national level to explore the potential to standardise Bridge Assessment Guidelines.

Pavement wear

A key infrastructure issue regarding opening access to heavy vehicles is the effect of heavy vehicles on road pavement. Some HPVs operating at higher masses will cause greater pavement wear than vehicles in the current heavy vehicle fleet when compared vehicle to vehicle, but on a task basis HPV's typically out-perform standard heavy vehicles and have a reduced cumulative impact on pavements.

It is important that road managers gather sufficient evidence to fully understand the potential cumulative impacts of HPVs on road pavement. There are various methods available that can be used to assess the potential impacts of HPVs.¹⁷ Where analysis indicates that additional pavement wear is expected, a Benefit Cost Assessment using a quantitative assessment of predicted total HPV movements and the resultant cumulative pavement wear should also be determined. This ensures that access decisions are based, as far as possible, on an overall assessment of the pavement impact and the economic gains of the increased productivity.

Currently the Australian Government is working with state, territory and local governments, as well as industry and community stakeholders, to progress Heavy Vehicle Road Reform. This includes trials at both a national and local level through the National Heavy Vehicle Charging Pilot and the Business Case program for Location-Specific Heavy Vehicle Charging Trials.¹⁸

The ultimate goal of heavy vehicle road reform is to turn the provision of heavy vehicle road infrastructure into an economic service where feasible. This would see a market established that links the needs of heavy vehicle users with the level of service they receive, the charges they pay and the investment of those charges back into road services.

Streamlining of administration processes

The Framework identifies the need to reduce red tape for industry by having a streamlined policy that promotes access on a network basis, rather than access via permits, and to streamline the existing permit process. This includes gazetted as of right access as suitable networks are developed. TfNSW will work with the National Transport Commission, National Heavy Vehicle Regulator and Roads and Maritime Services to promote more efficient access and permit arrangements including taking better advantage of the use of preapprovals.

¹⁷ See Austroads (2011) [Austroads \(2011\) Pavement Wear Assessment Method for PBS vehicles](#)

¹⁸ See Department of Infrastructure and Regional Development link <https://infrastructure.gov.au/roads/heavy/charging-trials/index.aspx>

4 Strategic Priorities for Opening Access to Heavy Vehicles in NSW

4.1 Overview

Taking into account the policy objectives outlined in Section 3, this section outlines a strategic approach to building an effective road network for heavy vehicle access, particularly for high productivity vehicles. This includes highlighting the key considerations to identify priority areas when building NSW networks.

4.2 Key considerations to identify strategic priorities

Strategic priorities to open access to heavy vehicles include industry demand, connectivity, regional issues and the national road network. These are discussed briefly below.

Industry demand

Industry demand for access for specific freight tasks and passenger services on particular routes and networks need to be considered to inform the development of strategic access priorities. TfNSW has published freight data on the [Freight Hub](#) website. However, there are many different data sources and data modelling that is used to determine current and future demand for freight and buses, but presently this does not provide a complete picture of freight movements. There is a need for a full understanding of general freight movements, specific commodity flows, new vehicles proposed for future productivity gains, and impacts of new infrastructure and land use. Building networks for more specialised supply chains on a micro level, such as passenger buses, also needs to be delivered.

Connectivity across the road network

The policy focuses on building a “network” for HPVs on key State Roads and also on connectivity to NSW Local Roads, or the “last mile”. The identification of strategic road/transport corridors provide useful guides to future funding needs but must be expanded to include key Local Roads, especially those identified as strategic first and last mile connections in an integrated freight network.¹⁹ Partnerships with local councils are vital to developing connected networks to support industry needs.

Not a “one-size-fits-all” approach

Regional productivity and industry needs to be taken into account. It is recognised that the road network is not uniform, and the freight task also varies so a uniform approach across the entire network is not the optimal approach. There is clear commitment to improved access for safer, more productive and more sustainable vehicles supported by access decisions that lead to safe and productive freight outcomes.

National network context

Given that around 60 per cent of the freight hauled on NSW roads has an origin and/or destination outside NSW, links to key interstate freight routes and harmonisation of access also needs to be considered in building networks.

¹⁹ LGNSW submission to the draft NSW Freight and Ports Plan 2018.

4.3 Strategic Priorities for Regional Networks and the Sydney Greater Metropolitan Area

This section provides a brief overview of the current access framework and strategic priorities to open access for all classes of restricted heavy vehicles operating on NSW roads.

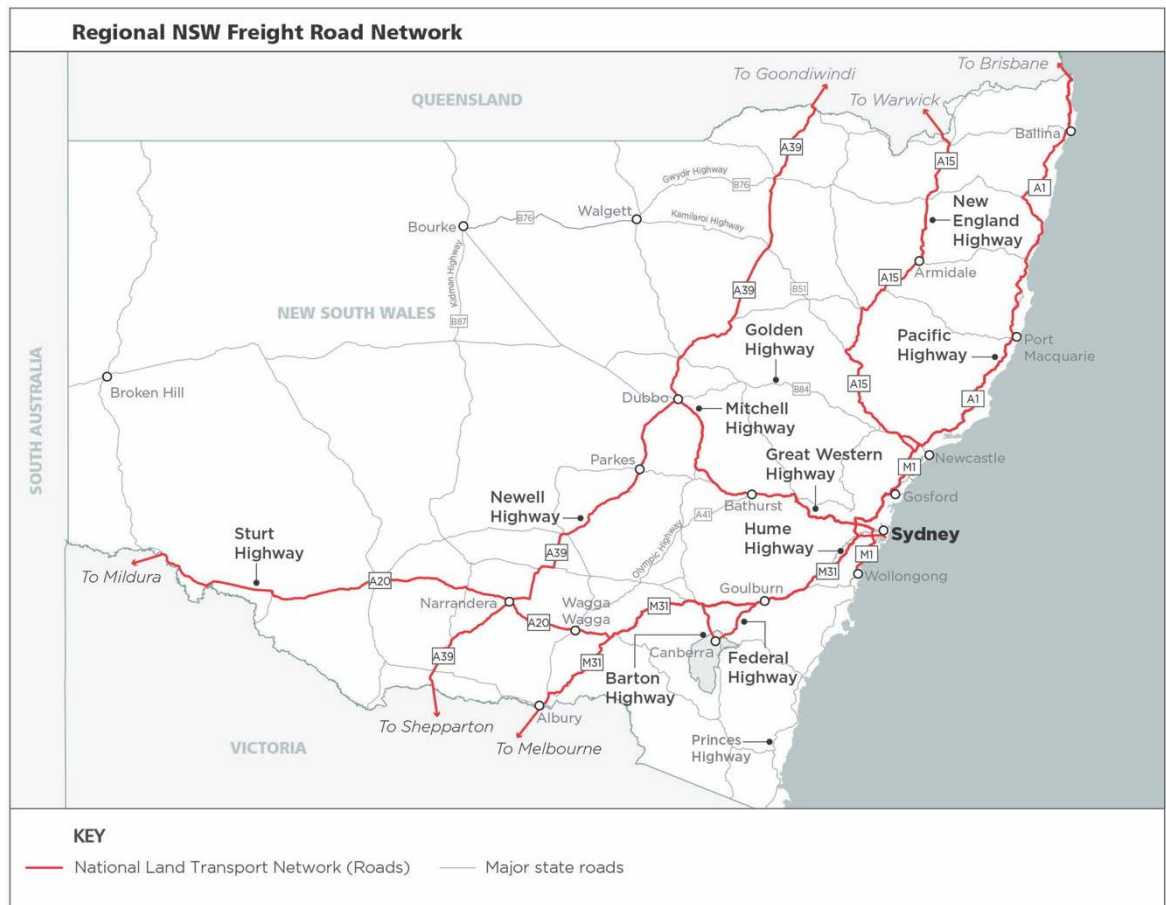
Detailed descriptions of the new access priority networks and operating conditions for all classes of restricted heavy vehicles operating on NSW roads is also given in Part B. Policy Settings and Applications of this document. These are:

- Modern High Productivity Vehicles
 - PBS Level 2B 30m vehicles in regional and Sydney greater metropolitan area.
 - PBS Level 3A, prescriptive B-triples and modular B triples operating at GML
 - Modern Type 1 (A-double) road trains meeting PBS standards
- Prescriptive traditional road trains and quad road trains meeting relevant PBS standards
- Restricted Access Vehicles up to 26m (i.e. B-doubles)
- Commodity Schemes
- Double Decker Buses

The overall current access framework for heavy vehicles across NSW is based around the Newell Highway. The Newell Highway is the longest highway in NSW, running north to south through the state and providing an essential connection for western NSW.²⁰ The Newell Highway forms a useful reference point such that west of the Newell there is a different topography and lower traffic volumes.

²⁰ Newell Highway Corridor Strategy (May 2015).

Figure 4. Regional NSW Freight Road Network (Major State Roads and National Land Transport Network)



Source: NSW Freight and Ports Plan 2018

This Framework seeks to identify strategic priorities to improve productivity for road freight taking into account access policy objectives (see Section 3).

Regional and Key Road Freight Routes

The current access policy will be reviewed as further evidence and information becomes available about the growing freight task and the network that's required to support that task.

Within NSW there are a large number of key road freight routes supporting the vital Heavy Vehicle industry, as shown in Figure 5 below. The most frequently used road corridors in NSW are the Pacific (M1) and Hume (M31) Highways, which carry most of the 81 million tonnes of interstate freight between Melbourne, Sydney and Brisbane. Road corridors including the Newell (A39), Sturt (A20) and New England (A15) Highways support primary industries in western NSW.

Access from west of the Great Dividing Range, where agriculture production dominates, to across to the east is an issue for the heavy vehicle industry. The Great Western Highway is an important freight link to the Central West. There are significant infrastructure and other issues which limit potential HPV on this road. This Framework explores access across the Great Dividing Range by consideration of the Golden Highway for access by PBS 2B vehicles. Regional networks are also important for connectivity.

Figure 5. Freight routes with the highest freight flows in NSW



Sydney Greater Metropolitan Area and Ports

In the Sydney Greater Metropolitan Area, export and import products, typically in containers, are transported through Port Botany. Port Botany is the nation's second largest container freight port (second to Port of Melbourne). Currently more than two million twenty foot container equivalents pass through the port each year, with container throughput expected to increase with the growth of the freight task. Most (around 85 per cent) of the containerised freight moving between Port Botany and other parts of Sydney is carried out by road.

To effectively manage the growing freight task while alleviating pressure on the road network, the NSW Government has established a rail mode share target in NSW 2021, to double the number of containers moved by rail by 2020. If achieved, this will result in 28 per cent of the task being managed by rail. The development of the Moorebank intermodal terminal is a critical enabler in achieving this target.²¹

It is, therefore, important that access decisions for HPVs, particularly for port related tasks are designed to ensure that the container freight task is managed efficiently. This will include consideration of the NSW Government's rail mode share target and changes to land use patterns which have implications for the distribution task.

The two main regional ports do not have the same magnitude of demand as Port Botany. Export freight tasks around Port Kembla have mainly focused around moving coal to the port from Appin. The Port of Newcastle is dominated by the key commodity of coal which is moved by rail for export. There has been some steel product movements between processing places around Newcastle Port area, and

²¹ Note that intermodal terminals such as Chullora and Enfield also facilitate the efficient exchange between rail and road.

there is an interest in access from west of the dividing range to Newcastle Port via the Golden Highway for agricultural products.

The other key constraint to freight movement in Sydney, particularly for higher density loads such as construction material, is the limitation on the movement of vehicles operating at Higher Mass Limits (HML). This relates to the capacity of bridges on both the State and Local Road network. Prioritised funding is needed to establish a suitable freight network to accommodate this demand.

PART B – NEW POLICY SETTINGS

5 Access priority networks for PBS and modern High Productivity Vehicles

PBS Level 2B, PBS Level 3A vehicles, and prescriptive B-triples, Modular B-triples operating at HML, and modern Type1 (A-double) road trains

5.1 Overview

This section outlines priority road freight networks for access productivity gains for high productivity vehicles. The policy settings below supersede the current NSW policies governing network access for heavy vehicles and provide the platform from which to build new road freight networks that support the safe and efficient use of new and emerging HPVs.

An overview of the current access policy, a vision for revised access policy, and an interim policy approach is also given for different vehicle types.

The overall revised policy for PBS Level 2B, PBS Level 3A vehicles, and prescriptive B-triples, Modular B-triples operating at HML and modern Type1 (A-double) road trains is summarised in the *Figure 6* below:

Figure 6. Current and future access for modern HPVs

High Productivity Vehicle	Current Access policy	Interim Access Policy (0 – 5 years)	Vision for Access Policy (5-10 years)
PBS Level 2B combinations			
Regional Priority Routes	<p><u>Access:</u> case by case basis. No dedicated network</p> <p><u>Access mechanism:</u>²² Permit</p> <p><u>Conditions:</u> IAP, NHVAS, RFS</p>	<p><u>Access:</u> Sections of Hume, Pacific and Golden Highways that are considered suitable</p> <p><u>Access mechanism:</u> Permit including pre-approved permit</p> <p><u>Indicative conditions:</u> IAP or equivalent, NHVAS, RFS, fatigue management</p>	<p><u>Access:</u> whole length of Hume, Pacific and Golden Highways with supporting road network</p> <p><u>Access mechanism:</u> Notice</p> <p><u>Indicative conditions:</u> IAP or equivalent, NHVAS, RFS, fatigue management</p>

²² Access mechanisms under the HVNL for restricted access heavy vehicles involve either permit or notice. Permit access requires operators to apply through the NHVR for a permit to travel on a particular route for a set period of time. The relevant road manager/s will assess and approve/deny the requested travel as required under the HVNL. Notice access is where by a network for a particular type has been approved for use with a set of conditions. The NHVR is responsible for issuing such a notice and operators of the eligible vehicles must ensure they/their vehicles comply with the notice conditions to travel on the approved network.

High Productivity Vehicle	Current Access policy	Interim Access Policy (0 – 5 years)	Vision for Access Policy (5-10 years)
Sydney GMA and Port Botany	<u>Access:</u> Limited access permitted	<u>Access:</u> Sydney Motorways and connected roads	<u>Access:</u> PBS 2B Sydney GMA Network (part of PBS 2B State-wide network).
	<u>Access mechanism:</u> Permit	<u>Access mechanism:</u> Permit including pre-approved permit	<u>Access mechanism:</u> Notice
	<u>Conditions:</u> IAP, NHVAS, time limited, monitoring	<u>Conditions:</u> IAP or equivalent, NHVAS, RFS Congestion management	<u>Indicative conditions:</u> IAP or equivalent, NHVAS, RFS, congestion management
Port of Newcastle and Port Kembla	<u>Access:</u> Limited access for steel and coal tasks	<u>Access:</u> Assess applications on a case-by-case basis	<u>Access:</u> PBS 2B State-wide network
	<u>Access mechanism:</u> Permit	<u>Access mechanism:</u> Permit	<u>Access mechanism:</u> Notice
	<u>Conditions:</u> IAP, NHVAS, RFS	<u>Indicative conditions:</u> IAP or equivalent, NHVAS, RFS, congestion management	<u>Indicative conditions:</u> IAP or equivalent, NHVAS, RFS, congestion management
Modern HPVs - PBS Level 3A Vehicles, prescriptive B-triples, Modular B triples operating at GML, and modern Type1 (A-double) road trains meeting PBS level 3 standards			
On the Newell	<u>Access:</u> some sections of Newell Highway	<u>Access:</u> Add sections of Newell Highway to the current linkages as infrastructure upgrades are completed	<u>Access:</u> whole length of Newell Highway.
	<u>Access mechanism:</u> Permit and Notice	<u>Access mechanism:</u> Permit, pre-approved permit and Notice	<u>Access mechanism:</u> Notice
	<u>Conditions:</u> IAP (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS	<u>Indicative conditions:</u> IAP or equivalent (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS, hours of operation	<u>Indicative conditions:</u> IAP or equivalent (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS, hours of operation

High Productivity Vehicle	Current Access policy	Interim Access Policy (0 – 5 years)	Vision for Access Policy (5-10 years)
East of the Newell	<p><u>Access:</u> approved roads only; no dedicated network</p> <p><u>Access mechanism:</u> Permit and Notice</p> <p><u>Conditions:</u> IAP (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS</p>	<p><u>Access:</u> Assess applications on a case-by-case basis while network finalised</p> <p><u>Access mechanism:</u> Permit including pre-approved permit and Notice</p> <p><u>Indicative conditions:</u> IAP or equivalent (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS safety mitigation</p>	<p><u>Access:</u> PBS Level 3A Network (to be developed) not including within Sydney GMA.</p> <p><u>Access mechanism:</u> Permit and Notice</p> <p><u>Indicative conditions:</u> IAP or equivalent (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS, safety mitigation</p>
West of the Newell	<p><u>Access:</u> Road train network</p> <p><u>Access mechanism:</u> Notice</p> <p><u>Conditions:</u> IAP (except for modern Type 1 (A-double) road train operating at GML/CML), NHVAS, RFS</p>	<p><u>Access:</u> status quo</p>	<p><u>Access:</u> status quo</p>

5.2 High Productivity Vehicles – PBS Level 2B vehicles

Current access policy for PBS 2B vehicles in NSW

- 30m PBS 2B vehicles mostly require a permit to operate and currently do not have a dedicated network.
- PBS 2B vehicles are permitted access to the PBS Level 3 network and suitable regional sections of the PBS Level 2 network by permit considering bridge constraints, stacking and signal timing including at rail level crossings.
- For major freight route corridors outside Sydney:
 - No access to the Hume Highway, Golden Highway or Pacific Highway.
 - Access on the Newell Highway is section-based. Access is allowed on sections with infrastructure upgrades. Policy for HPV access in the vicinity of the Newell Highway is unclear to industry and local government further clarification will be given to enable uniformity in heavy vehicle access around the region.
- In the Sydney Greater Metropolitan Area (GMA), 30m PBS Level 2B vehicles may operate on the motorway network and key connecting roads by permit to and from

key container related locations including the Port Botany precinct, distribution centres, intermodal terminals and empty container parks.

Revised policy for PBS Level 2B vehicles in NSW

NSW supports the use of PBS Level 2B vehicles because they are safer and more productive vehicles compared to the prescriptive fleet. The NSW policy for PBS Level 2B vehicles is that they will be considered for access on the state-wide network where suitable. Some restrictions will apply to Port Botany and within the Sydney GMA in the interim to allow for research and policy development to be undertaken to ensure a holistic and efficient approach across key freight transport modes (i.e. road and rail), as well as passenger transport.

The current NSW policy requires vehicles at PBS Level 2B and above to be enrolled in the IAP for route compliance monitoring. This policy will continue to apply to these vehicles travelling on NSW roads, noting that there is currently a national review of IAP and telematics which may inform future policy settings or equivalent systems (see 5.4). In addition, consideration will be given to the use of approved On-Board Mass (OBM) systems in vehicles in return for greater access where bridge capacities are limited. The strategic vision is that these vehicles will be able to operate at more productive mass limits, as the arterial road network is upgraded.

The strategic priority is to build a state-wide network for PBS Level 2B vehicles. This will allow these PBS vehicles to meet the main freight task on the east coast of Australia (Melbourne-Sydney and Sydney-Brisbane) and achieve end to end movements between key places for freight in regional and metropolitan areas.

The following freight routes will form an initial broad base notional network for PBS Level 2B combinations:

- All current permit routes approved for PBS 2B vehicles;
- All current approved road train, modern road train, and B-triple routes; and
- Key Freight Routes in NSW approved by Transport and Infrastructure Council,²³ including the Hume, Pacific and Golden Highways.

All other routes forming part of this notional network will need to be assessed by the relevant road managers against the PBS Level 2B vehicles for safety and infrastructure suitability before access can be provided. Figure 7 depicts the interim network access which will be commenced for PBS 2B vehicles on key NSW roads.

²³ http://transportinfrastructurecouncil.gov.au/publications/freight_route_maps.aspx

Figure 7. PBS Level 2B Combinations – Interim Access Policy with Permit



Strategic priority – access for PBS 2B Vehicles on the Hume, Pacific and Golden Highways

These three major freight corridors in NSW provide significant freight flows within the state and across the borders. The NSW strategic freight objective is to provide access for PBS 2B vehicles on these freight routes as they progressively become suitable for use by these combinations.

As the whole length of these three freight corridors are currently not suitable for end to end travel by PBS 2B vehicles, the interim approach is to open sections which are suitable for access under permit to facilitate short trips for local freight. Access to the whole corridor will be provided in a staged approach.

Hume Highway: The Hume Highway between Sydney and Melbourne is Australia’s busiest interstate freight route and carries 40 per cent of the total national road freight task. Over 90 per cent of freight moving between Sydney and Melbourne is transported by road. In terms of geometry and infrastructure, the Hume Highway is suitable for PBS 2B vehicles operating at 68 tonnes (based on bridge constraints). The key outstanding issue is that some existing current truck rest areas along the highway between Sydney and the Victorian border, which were designed to fit 26 metre B-doubles, could not adequately accommodate 30 metre PBS Level 2B vehicles, particularly during periods of peak truck movements along the road corridor. There is also a lack of decoupling sites at the Sydney end of the corridor to allow these vehicles to break down into smaller vehicles (e.g. semi-trailers) so as to be able to travel into Sydney.²⁴

²⁴ 2013 unpublished consultant study commissioned by TfNSW.

In the interim, a suitable fatigue management approach needs to be developed to give a level of assurance that potential safety issues are mitigated. Short distance end to end travels (i.e., not the full length of the Highway) may be considered under permit.

Pacific Highway: The Pacific Highway has had many sections duplicated in recent times, with full duplication expected to be completed in 2020. Once fully duplicated, the full length of the Pacific Highway will be able to accommodate PBS 2B vehicles.

The interim policy approach is that access can be considered for sections of the Highway that are duplicated and suitable for PBS 2B vehicles. Suitable fatigue management, which may take into account rest areas and decoupling sites and complete end to end movements, needs to be considered.

Golden Highway: the Golden Highway Corridor Strategy²⁵ identified potential upgrades along the Golden Highway which will guide investment, leading to access for PBS 2B vehicles in the future. The strategy was released with \$133 million secured under the NSW Regional Freight Pinch Point and Safety Program and the Federal Heavy Vehicle Safety and Productivity Programme (HVSPP) to undertake a program of freight productivity and safety works to facilitate the introduction of larger HPVs.

The interim approach is that access will be considered under permit for sections of the highway that are suitable for PBS 2B vehicles for end to end freight tasks. Access will be developed in consideration of regional issues, and regional networks will be developed with local councils and relevant stakeholders.

Strategic Priority – PBS 2B Network at Port Botany and Sydney GMA

The aim is to take a staged approach to providing access for PBS Level 2B vehicles from Port Botany and Sydney GMAs. The goal of building an effective PBS 2B network in the Port and Sydney GMA is to facilitate efficiency in the container freight task. To achieve this, research has been conducted to better understand the industry freight task current and future needs while at the same time allowing limited monitored permit-based access. This research is enabling a more sophisticated and effective approach to building the HPV network, particularly from the port.

Strategic Priority – Expanding the HML network in Sydney GMA

The age and capacity of bridges on the Sydney road network significantly constrains HML movements, such as those for the construction industry. In the short-term more detailed bridge assessment and assured mass loading compliance could open up strategic sections of the road network.

In the longer terms coordinated regional efforts by road managers, both Roads and Maritime and councils, to create freight networks combined with a prioritised funding program for upgrading bridges are proposed to address the network gaps.

Great Western Highway

Current access for the Great Western Highway is limited to 19 metre prescriptive and 20 metre PBS vehicles. There are significant infrastructure constraints, which need to be addressed to open up access for vehicles that are 26 metre (or longer). These will be investigated further.

²⁵ 2013 unpublished consultant study commissioned by TfNSW.

5.3 Modern HPVs - PBS Level 3A vehicles, and prescriptive B-triples, Modular B-triples operating at GML and modern Type 1 (A-double) road trains meeting PBS Level 3 standards

PBS Level 3A vehicles, B-triples, Modular B-triples operating at GML, and modern Type 1 (A-double) road trains currently have limited access east of the Newell Highway, including some sections of the Newell Highway. This recognises that these combinations are modern vehicles with enhanced safety features and/or equipment suitable to operate safely on the more challenging topography of the road network east of the Newell Highway.

Access will be developed in consideration of regional issues, and regional networks will be developed with local councils and relevant stakeholders.

The policy settings for these modern combinations as confirmed by this Framework are as follows:

- **West of the Newell Highway.** The traditional road train network west of the Newell Highway and any other roads in the western region will be considered for use by modern HPVs. While many roads which are part of the approved road train network are already approved for these combinations, those that are currently not available will need to be assessed by the relevant road managers before access can be provided.
- **On the Newell Highway.** The Newell Highway Corridor Strategy, which was released in May 2015,²⁶ outlines the NSW policy intention of opening up the entire length of the Highway to modern combinations meeting PBS level 3 standards such as B-triples, modern road trains and PBS Level 3A (≤ 36.5 metres) vehicles. The Strategy identified necessary road upgrades to enable HPV access on this key freight corridor and was supported through a reservation of \$500 million from Rebuilding NSW. Once the package of works is delivered, modern HPVs can be granted access to the whole length of the Newell Highway. Providing access for PBS vehicles and equivalent modern HPVs to the entire length of the Newell Highway would provide a key transition between the two zones east and west of the Newell, as well as provide a freight link in western NSW between Victoria and Queensland.
- **East of the Newell Highway.** Access east of the Newell Highway for these modern HPV combinations meeting PBS Level 3 standards will be supported for routes in regional NSW areas that provide linkages to key freight sites. Existing approved access east of the Newell will continue to be available for modern HPVs. New routes will be assessed by the relevant road managers taking into account infrastructure, safety and amenity. Access east of the Newell Highway for these modern HPVs will not include roads in urban areas including within the Greater Metropolitan Areas at this point in time

Operating conditions

The road safety and infrastructure concerns and amenity issues associated with the road network east of the Newell Highway mean that the current access conditions for these combinations are necessary and therefore retained for these combinations. These access conditions include:

²⁶ <http://www.transport.nsw.gov.au/projects-road-network-corridor-planning>

- Certification that combination meets PBS level 3 standards
- Tri-axle dollies with certified RFS for modern road trains;
- Certified road friendly suspension (throughout the combination for B-triples) or equivalent;
- Enrolment in IAP or equivalent for B-triples or equivalent vehicles;
- National Heavy Vehicle Accreditation Scheme (NHVAS) accreditation or equivalent; and
- Possible time of day restrictions which can be imposed by Roads and Maritime or councils for a particular route if required.

5.4 Intelligent Access Program or other telematics systems

The intelligent access program currently provides restricted access for vehicles posing a significant risk to infrastructure with improved access to NSW's road network. In return, their compliance with approved access conditions is monitored using satellite-based tracking technology. This provides Roads and Maritime Services and the community with greater assurance that the right heavy vehicles are operating on the right roads.

The NTC is reviewing the use of telematics for regulatory purposes across the transport sector in order to find ways to encourage further take-up and realise safety and productivity benefits. This review includes Intelligent Access Program (IAP) and the broader use of telematics across the whole heavy vehicle fleet.

The Transport Infrastructure Council has agreed to progress a number of initiatives including examining a national approach to improving the uptake and capacity of telematics for business and regulatory purposes, and the introduction and uptake of safety technologies in the heavy vehicle fleet. NSW will be providing input into; and considering the outcomes of these reviews of telematics and IAP to improve productivity while protecting vulnerable assets.

The outcomes of this work and emerging technology will be considered and incorporated into access decisions in the future to continue to improve productivity while managing vulnerable assets.

6 Access priority networks for traditional road trains, modular B-triples operating at GML/CML, and B-doubles

6.1 Overview

The table below (Figure 8) summarises the current access policy and future options for certain prescriptive vehicles.

Figure 8. Current and future access for traditional combination

Prescriptive vehicles	Current Access policy	Interim Access Policy (0 – 5 years)	Vision for Revised Access Policy (5-10 years)
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Traditional Type 1 (A-double) road trains, modular B-triples operating at GML/CML

	<p><u>Access:</u> some sections of Newell Highway approved for road trains (modular B-triples operating at GML/CML not allowed on the Newell)</p> <p><u>Access mechanism:</u> Notice</p>	<p>Explore expanding access by permit on and around the Newell Highway to vehicles that meet the PBS 3A standard</p>	<p>Develop a PBS 3A network, initially by permit moving towards a notice, following community consultation and taking into account necessary upgrades such as rest areas, de-coupling areas etc.</p>
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Quad road trains

NSW West of the Newell	<p><u>Access:</u> No access permitted in NSW</p>	<p><u>Access:</u> Provide access by a staged approach taking into account regional issues</p> <p><u>Access mechanism:</u> Permit</p> <p><u>Conditions:</u> Need to meet relevant PBS standards, IAP or equivalent, NHVAS, RFS, safety</p>	<p><u>Access:</u> west of the Newell Highway.</p> <p><u>Access mechanism:</u> Notice</p> <p><u>Conditions:</u> Need to meeting relevant PBS standards, IAP or equivalent, NHVAS, RFS, safety</p>
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Restricted access vehicles up to 26m (i.e. B-doubles)

Prescriptive vehicles	Current Access policy	Interim Access Policy (0 – 5 years)	Vision for Revised Access Policy (5-10 years)
NSW network in regional areas and Sydney GMA	<u>Access:</u> B-double network	N/A	<u>Access:</u> Ongoing review of the B-double network and expansion of relevant HML networks.

6.2 Traditional road trains and transition to more modern vehicles

These combinations operate in NSW under the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1) and their access is, by and large, limited to the western NSW region that is west of the Newell Highway. The revised policy is that these traditional combinations remain restricted to the road network west of the Newell Highway.

Roads east of the Newell Highway are not considered suitable for use by traditional combinations due to infrastructure constraints, higher traffic volumes and associated road safety and amenity issues.

This policy setting was confirmed by the Minister for Roads, Maritime and Freight in 2011 as part of NSW adoption of the NTC national policy for Modular B-triples. The Modern Road Train policy which began with the Kamilaroi Highway (east of the Newell Highway) in 2012 is further evidence of the NSW Government's intention to allow only modern and safer combinations which meet PBS Level 3 standards east of the Newell Highway.

Consistent with the NHVR and the NSW Government's objective of promoting use of modern and safe HPVs on NSW roads, the NSW access policy for traditional combinations will remain unchanged at this time. That is, these combinations may only operate on the current approved network west of the Newell Highway and any existing approved sections of the Newell. Any future routes to be assessed and approved must be located in the western region west of the Newell Highway.

It is recognised that some sections of the Newell Highway are currently approved for traditional road trains. However, the NSW policy intention with respect to the Newell Highway (as per the Newell Highway Corridor Strategy) is that, in time the entire length of the Highway will be opened to modern combinations once necessary road infrastructure upgrades are completed.

The NSW policy is that where traditional road trains are upgraded to safety and performance features equivalent to modern road trains (e.g. Road Friendly Suspension and Tri-axle dollies, and in the NHVAS scheme or alternatively meet the PBS level 3 standards), these vehicles would be eligible for access on the Newell Highway. This is because these upgrades essentially reduce rearward amplification, improve vehicle stability and therefore improve ability to stay in their lane (on straight and curve), and reduces pavement wear.

6.3 Quad road trains

Quad road trains have the same total length (53.5m) and mass limit (122.5t GML) as Type 2 A-triple road trains in NSW, with the main difference being they can tow four

semi-trailers, whereas A-triple road trains can tow three semi-trailers. In NSW, Type 2 A-triple road trains may operate under the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No 1), however, quad road trains are currently not permitted under this Notice.

Quad road trains are high productivity vehicles that can carry the equivalent amount of freight as two B-doubles. ABB Quads and BAB Quads are currently allowed under permit. Type 2 Road Trains are permitted on the Mitchell Highway from Nth Bourke to the Queensland border. However, broader access for these combinations is currently not allowed in NSW and warrants a review as part of this policy.

This policy position is based on the fact that these combinations are of different configuration to traditional (A-triple) road trains with the ability to carry multi-trailers, and therefore they may behave differently on the road compared to the traditional combinations and against the relevant PBS standards. This needs to be examined for access to be considered under a Notice.

These combinations are allowed in Queensland and the Northern Territory and are seen as the modern equivalent of Type 2 A-triple road trains.

Recognising that quad combinations offer significant productivity improvements for the traditional freight task to Queensland, South Australia and the Northern Territory, and to enable harmonisation of access for these combinations with other jurisdictions, NSW has permitted access for AAB and BAB quad road trains in the far western region of NSW.

Due to the considerable size and mass of these combinations, assessment of the potential impact on safety and infrastructure will be undertaken prior to allowing these combinations on NSW roads. The PBS standards will be the appropriate benchmark for assessing the suitability of these multi-combinations operating on NSW roads. Further, consideration will be given to applying access conditions similar to those required of modern road trains and B-triples to provide increased safety and greater surety to road managers.

6.4 Restricted Access Vehicles up to 26m (i.e. B-doubles)

The current NSW access policy for restricted access B-doubles and other freight vehicles within the similar mass/dimension envelope is relatively uniform with other jurisdictions in terms of network access and operating conditions.

These vehicles operate under relevant national notices and their current available network in NSW is quite extensive, covering much of the state-wide network. New routes are assessed and approved by relevant road manager/s based on suitability of the road infrastructure.

The NSW access policy for these freight vehicles remains unchanged and this access policy confirms the policy status quo. Access will be considered on a case by case basis for PBS vehicles.

The current network available for these vehicles operating at HML is constrained. Further consideration will be given to identifying suitable networks and sourcing funding to facilitate the infrastructure upgrades needed to provide this access.

7 Access policy for Commodity Schemes and Double Decker Buses

7.1 Commodity Schemes

Access schemes to address particular issues in the movement of commodities have been introduced in NSW to improve the productivity and efficiency of the task. These schemes are developed, monitored, and reviewed on an ongoing basis.

For example some allowance has been made for the loading of grain on vehicles standing in paddocks under the NSW Grain Harvest Management Scheme. This allows approved vehicles to take full advantage of the masses allowed for general access vehicles in movements from the farm to first receipt point. A close check is kept on vehicle mass to ensure that only legal masses are moved. Similarly a scheme has been established allowing sugar cane to be moved using specially designed crates while ensuring they meet mass limits.

The Livestock Loading Scheme allows the variation in animal weights to be taken into account for the movement at higher masses, within the capacity of bridges in regional areas.

More recently, the NSW Government announced the Safety, Productivity & Environment Construction Transport Scheme, or SPECTS.²⁷ This is a voluntary scheme designed to enable the efficient movement of construction materials to support growth of the greater Sydney area by allowing enrolled trucks to carry more materials in return for meeting higher environmental and safety standards.

SPECTS enrolled vehicles will be required to have a PBS approval, have at least a Euro 5 engine, be fitted with a range of safety features, be enrolled in the Intelligent Access Program (IAP) and equipped with On Board Mass (OBM) monitoring systems linked to the IAP, to provide compliance assurance in return for improved access.

Productivity schemes will be reviewed to identify opportunities to encourage additional uptake and use of safer and more modern high productivity vehicles through additional productivity and access concessions where possible.

7.2 Double Decker Buses in the Sydney GMA

Enhanced efficiency of services for bus commuters will be achieved in key public transport corridors in the Sydney GMA by introducing new double decker buses to Sydney roads.

A fleet of 30 new double decker buses operating under Government contract commenced operation in November 2017, carrying commuters into the Sydney CBD from Sydney's Northern Beaches. These double decker buses can carry up to 92 passengers, compared with 65 passengers for single deck buses.

To allow double decker buses to carry more passengers at capacity, the Government has increased the mass limit for double decker buses from 20 tonnes to 22 tonnes. This change aligns double decker bus mass limits with the current 22 tonnes mass limit for eligible three axle single deck buses.

²⁷ For further information, refer <http://www.rms.nsw.gov.au/business-industry/heavy-vehicles/safety-productivity-environment-construction-transport-scheme/index.html>

To ensure safe operation at higher mass level, additional safety features are required of these buses; including vehicles must be fitted with Anti-lock Braking System (ABS) and Electronic Braking System (EBS), or Electronic Stability Control (ESC).

The operation of double decker buses may be extended to other key service routes in Sydney in the near future to improve the efficient utilisation of the road network.

PART C – POLICY IMPLEMENTATION and EVALUATION

8 IMPLEMENTATION

8.1 Overview

Implementation of the Framework involves the following key actions:

1. Establishing effective governance arrangements which engage stakeholders.
2. Establishing connected networks on Regional and Local Roads in partnership with local councils.
3. Developing State Road Networks for modern High Productivity Vehicles:
 - a. Key freight routes outside the Sydney GMA (Particularly PBS Level 2B combinations).
 - b. A Sydney GMA network for modern High Productivity Vehicles (Particularly PBS Level 2B combinations).
 - c. Supporting State Road networks informed by the interim policy and vision for the key freight routes and GMA network.
4. Building an evidence base of the characteristics of the current fleet, and monitor changes in the fleet in response to access policy implementation and future needs for ongoing productivity improvements.
5. Monitoring and promoting innovation and technological advances to enhance heavy vehicle access.

This work will be guided by stakeholder input. Each of these actions is briefly discussed below.

8.2 Governance arrangements and stakeholder engagement

Increasing the length of the State Road network approved for appropriate access under priority restricted access vehicle networks is a strategic target of the NSW Freight and Ports Plan 2018-2023.

Key stakeholders are engaged in implementation of the Framework, through new and existing communication structures, including:

- Case-by-case targeted stakeholder engagement to seek input to inform implementation plans for improving HPV access on State Road freight corridors.
- Ongoing advice on progress to the Road Freight Industry Council and Freight Advisory Council and industry groups as required.

8.3 Building connected networks on Regional and Local Roads in partnership with local councils.

To build connected networks, a regional approach is taken. TfNSW and Roads and Maritime engage with Local Government to facilitate building regional networks on Regional and Local Roads. Regional freight networks for HPVs are developed based on gathering evidence to understand the issues and support investment in infrastructure as discussed in Part A.

8.4 Building State Road networks for HPVs outside and within the Sydney GMA

Key actions are currently being undertaken by TfNSW and Roads and Maritime to implement the access policy proposals discussed in Part B as shown in Figure 9 below:

Figure 9. Key actions

Access proposal	Key Action
<p>PBS 2B network state-wide (outside the Sydney GMA)</p>	<p>Roads and Maritime is currently developing a PBS 2B network outside the Sydney GMA, initially focussing on the B-double State Road network, to facilitate access for PBS Level 2B vehicles under a notice. This PBS 2B network will include the key freight routes approved by Ministers at the Transport Infrastructure Council. Further work to improve connectivity by working with local councils to identify and assess additional routes at regional and local levels will also be conducted.</p>
<p>PBS 2B network for Port Botany and Sydney GMA</p>	<p>TfNSW and Roads and Maritime have completed research to better understand the industry freight task and impact on public amenity around the Sydney GMA road network. A staged approach to providing permit-based access has been initiated; allowing limited monitored access and potential issues including safety, congestion and impacts of land use changes.</p>
<p>Improving HML access in Sydney GMA</p>	<p>TfNSW will work with Roads and Maritime and councils to identify key freight routes and examine those structures constraining HML access to see if more detailed bridge assessment and assured compliance could open up access. Creation of a fund to allow prioritised upgrading of urban bridges is also being pursued.</p>
<p>PBS 3A network for modern HPVs</p>	<p>Roads and Maritime is currently investigating a PBS Level 3A network which should accommodate all modern HPVs including PBS 3A vehicles, B-triples, modern road trains and modular B-triples operating at HML. Until such time as this network is available, requested access will be considered by Roads and Maritime and relevant councils on a case by case basis taking into account safety and suitability of the road infrastructure, as well as productivity benefits. This work is expected to be completed by mid-2019.</p>

Policy for quad road trains Roads and Maritime, in consultation with TfNSW, are developing an operational policy to facilitate access for these combinations in the western NSW region. Access will be developed in consideration of regional issues, and regional networks will be developed with local councils and relevant stakeholders.

As the State Road Networks for HPVs are developed, TfNSW and Roads and Maritime will also consult with and inform councils of progress and work collaboratively to build connections to NSW State Road networks, taking into consideration Local Road connectivity. Work is also underway looking at how to improve farm gate access on Local Roads not designed for regular heavy vehicle use.

8.5 Building an evidence base

Ongoing data collection is important to build an evidence base for monitoring and ultimately evaluating the outcomes of the implementation of the Framework. For example, understanding the current and future composition of the NSW heavy vehicle fleet and growth in the freight task across the network, as well as collecting evidence regarding current networks for heavy vehicle access on State, Regional and Local Roads and their priorities/demand for improving access. It is also proposed to monitor changes in the nature of freight and its movement.

8.6 Monitoring and promoting innovation and technological advances to enhance heavy vehicle access.

Monitoring of current NSW proof-of-concept projects (outlined in Part A) and other national and international trials and programs using new technology that contributes to improving heavy vehicle access is ongoing.

To ensure that NSW can benefit from innovative technology in this policy context as it becomes known and available, there is ongoing consultation and collaboration with industry and the Smart Innovation Centre.

8.7 Streamlining of administration processes

Industry has identified the need to reduce red tape by having a streamlined policy that promotes access on a network basis, rather than access via permits, and to streamline the existing permit process. TfNSW will work with the National Transport Commission, National Heavy Vehicle Regulator and Roads and Maritime Services to promote more efficient access and permit arrangements including taking better advantage of the use of preapprovals and greater availability of information on current permits or approvals for given routes.

9 MONITORING AND EVALUATING THE FRAMEWORK

The Framework includes a process that focuses on continuous improvement, with a need to regularly review, evaluate and adjust the policy to support community and industry outcomes.

The first step in the medium term is a qualitative review to understand how effective the policy is, and whether the governance and stakeholder engagement arrangements have worked well. This will be investigated by seeking advice from relevant internal and external stakeholders.

The second step in the longer term is a review of the outcomes of the Framework. The ultimate success of this Framework would demonstrate that the objectives had been met: that is improved productivity for the industry, without compromising safety and minimising impacts on public amenity and road infrastructure.

To measure the impacts of this Framework the following performance areas may be considered:

- Improved productivity for the heavy vehicle industry – for example uptake of HPVs by industry and economic benefits to industry, and increasing networks to provide access for those vehicles on State and Local Roads
- Safety outcomes are improved - for example, monitor serious crashes involving heavy vehicles, by vehicle type where possible to monitor the impacts of introducing HPVs to the network.
- Public amenity impacts are managed - for example, impacts of HPVs on congestion in urban areas, impact on network capacity.
- Infrastructure – for example, monitor impacts of HPVs on road infrastructure and maintenance.
- Impact of the policy the road freight task and network – for example, understand current and future composition of the fleet, and compare with the number of trips, monitor the overall size of the road freight task and trends over time, compared with the network.
- Infrastructure projects to support increasing heavy vehicle access on State and Local Road networks are supported by evidence.

The evaluation framework will be further developed and refined as the policy is implemented.

Appendix A SCOPE OF THE POLICY & CLASSES OF HEAVY VEHICLES

This Framework applies to all restricted access heavy vehicles and PBS combinations, and buses operating in NSW.

Heavy vehicles are generally classed as either 'general access' or 'restricted access' vehicles.

A 'general access' vehicle is a vehicle that does not exceed 12.5m in overall length for a rigid vehicle, or 19m for an articulated combination (or 20 metre for a PBS vehicle), 2.5m in overall width, and 4.3m in overall height, and not carry more than the relevant concessional mass limits (CML). General access freight vehicles are allowed unrestricted access to the NSW road network, except where signposted otherwise.

A heavy vehicle is a 'restricted access' vehicle (RAV) if it has one or more external dimensions that exceeds the above envelope and/or carries more than the relevant CML weight provisions. Typical RAVs include:

- All heavy vehicles carrying Higher Mass Limits (HML) (including 19m semi-trailer combinations);
- B-doubles;
- Road trains (modern and traditional A-doubles, A-triples, quad road trains);
- B-triples, modular B-triples and AB-triples;
- 4.6m high vehicles such as livestock vehicles and car carriers; and
- Level 2 and above PBS vehicles (e.g. Truck and quad/quin dog combinations, 30m A-double road trains, 30m quad axle B-doubles aka. super B-doubles).

In NSW, with the exception of most PBS vehicles, each class of RAVs generally has its own dedicated RAV road network which it may operate on. The RAV road networks are available on interactive maps which are published on the [Roads and Maritime website](#).

The following types of vehicles are included in this policy:

- All prescriptive vehicles operating at HML
- All restricted freight vehicles up to the size and mass of a 26m B-double
- 'Traditional' Type 1 (A-double) road train with a total length not exceeding 36.5m
- Traditional Type 2 (A-triple) road train with a total length not exceeding 53.5m
- Modern Type 1 (A-double) road train with a total length not exceeding 36.5m
- Modern Type 2 (A-triple) road train with a total length not exceeding 53.5m
- Modular B-triple with a total length not exceeding 35m
- B-triple with a total length not exceeding 36.5m
- AB-triple with a total length not exceeding 36.5m
- AAB quad road train with a total length not exceeding 53.5m
- BAB quad road train with a total length not exceeding 53.5m
- PBS Level 2B A-double combinations
- PBS Level 2B B-double combinations (with or without a quad axle group)
- PBS Level 3A B-double combinations (with or without a quad axle group)
- Double Decker Buses

Traditional Type 1 (A-double) road train refers to road train combinations that operate under the mass limit provision [clause 10(a) of Schedule 1 to the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1)] and comply with all the relevant conditions under that Schedule.

Traditional Type 2 (A-triple) road train refers to road train combinations that operate under the mass limit provision [clause 10(d) of Schedule 1 to the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1)] and comply with all the relevant conditions under that Schedule.

Modern Type 1 (A-double) road train refers to road train combinations that comply with the requirements in the mass limit provision [clause 11(a) (ii) of Schedule 1 to the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1)] and all other relevant conditions under that Schedule

Modern Type 2 (A-triple) road train refers to road train combinations that comply with the requirements in the mass limit provisions [clauses 11(a) (iii) and 11(a) (IV) of Schedule 1 to the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1)] and all other the relevant conditions under that Schedule

B-triple, modular B-triple, AB-triple, AAB quad road train and BAB quad road train are as defined in the National Class 2 Heavy Vehicle Road Train Authorisation (Notice) 2015 (No. 1) and Schedule 1 to that Notice.

AAB and BAB Quad Road Trains are combinations that consist of a prime mover towing four semi-trailers and can be up to 53.5m long. They are currently not permitted in NSW. However, NSW is currently considering the feasibility of allowing limited access for these combinations on suitable parts of the NSW road network under this Framework.

Performance Based Standards (PBS) vehicles are vehicles that have been approved under the PBS Scheme. The PBS Scheme which commenced in 2007 provides an alternative outcomes-based means to facilitate the development of HPVs that are safer and better equipped to handle the future freight task. PBS vehicles

need to meet 16 performance safety and four infrastructure standards and be approved by the National Heavy Vehicle Regulator (NHVR) before they are allowed to use road networks assessed by road managers as suitable for them.

The regulatory controls under the PBS scheme focus on investigating how well the vehicle performs, rather than specifying maximum dimensions (e.g. length, width and height) or design characteristics, through a set of safety and infrastructure protection standards, which focus on quantifying vehicle performance in many key areas. This enables vehicles to be specifically designed to safely travel on particular road networks.

The operation of PBS vehicles in NSW is by access permit and/or National PBS Notice depending on the type of PBS vehicle. These access permits and/or National Notices provide details on the conditions of operation and road network access permitted for a PBS vehicle in NSW.

PBS road network access in NSW is based on the four PBS performance levels (Levels 1 – 4) and access classes ‘A’ and ‘B.’ For PBS Level 2 and above, PBS road network access is divided into ‘A’ and ‘B’ networks based on vehicle length as shown in the Table 1 “PBS Networks”. Note that for example, a PBS Level 2 vehicle has to satisfy the same swept path standard (to meet PBS Level 2 Performance Level), regardless of the length of the vehicle. The length of the PBS Level 2 vehicle determines the access class - A and B access.

Figure 10. PBS Networks

PBS Performance Level	Access Class 'A'	Access Class 'B'
1	≤ 20 metres in length	≤ 20 metres in length
2	≤ 26 metres in length	≤ 30 metres in length
3	≤ 36.5 metres in length	≤ 42.5 metres in length
4	≤ 53.5 metres in length	≤ 60.0 metre s in length

There are two main categories of restricted access PBS vehicles currently in operation in NSW.

1. **Level 2A combinations:** These combinations have a maximum overall length of 26m and consist mainly of various truck and dog trailer combinations. The current approved networks for these truck and dog trailer combinations are the existing B-double general mass limits (GML) and HML networks.
2. **Level 2B combinations:** These vehicles have an overall length of between 26m and 30m. However, the majority are closer to 30m. The typical PBS Level 2B combinations are HML quad axle B-doubles (also known as Super B-doubles) and PBS A-doubles. These PBS combinations are capable of carrying two 40 foot containers and offer considerable productivity improvements (up to 30 per cent increase in payload) over standard 26m B-doubles.

Currently they are utilised in various freight tasks in and around Sydney in small numbers under permit, including moving containerised freight within Port Botany precincts and from the port to approved distribution centres (Super B-doubles). These combinations are capable of meeting the projected freight demand as they deliver improved productivity on existing networks.

There has been a notable increase in recent times in the use of PBS combinations in NSW with the more common combinations being truck and quad/quin dog, 30 metre A-double road train, HML quad axle B-double (super B-double).

A-Double/Type 1 Road Train Combination with Tandem Axle Dolly
36.5 metres maximum overall length

20.0t	16.5t	20.0t	16.5t	6.0t
GML [^] : 79.0t				
21.0t	17.0t	21.0t	17.0t	6.0t
CML [^] : 81.0t**				
22.5t	17.0t	22.5t	17.0t	6.0t
HML [^] : 85.0t***				

Rigid Truck and Two Dog Trailer Combination/Type 1 Road Train
36.5 metres maximum overall length

16.5t	16.5t	16.5t	16.5t	16.5t	6.0t
GML [^] : 79.0t					
17.0t	17.0t	17.0t	17.0t	17.0t	6.0t
CML [^] : 81.0t**					

HML

Combination not eligible for operation at Higher Mass Limits

A-Double/Type 1 Road Train Combination with Tri-axle Dolly / Modern Road Train
36.5 metres maximum overall length

20.0t	20.0t	20.0t	16.5t	6.0t
GML [^] : 82.5t				
21.0t	21.0t	21.0t	17.0t	6.0t
CML [^] : 84.5t**				
22.5t	22.5t	22.5t	17.0t	6.0t
HML [^] : 90.5t***				

Operator must be accredited in the Maintenance Management Module of NHVAS when operating on approved routes east of the Newell Highway

RFS Tri-axle converter dolly must be fitted with certified Road Friendly Suspension

Modular B-Triple Combination
35.0 metres maximum overall length

20.0t	20.0t	20.0t	16.5t	6.0t
GML [^] : 82.5t				
21.0t	21.0t	21.0t	17.0t	6.0t
CML [^] : 84.5t**				
22.5t	22.5t	22.5t	17.0t	6.0t
HML [^] : 90.5t***				

B-Triple Combination
36.5 metres maximum overall length

20.0t	20.0t	20.0t	16.5t	6.0t
GML [^] : 82.5t				
21.0t	21.0t	21.0t	17.0t	6.0t
CML [^] : 84.5t**				
22.5t	22.5t	22.5t	17.0t	6.0t
HML [^] : 90.5t***				

IAP required for operation at all mass limits
Operator must be accredited in the Maintenance Module of NHVAS

AB-Triple Combination with Tandem Axle Dolly
36.5 metres maximum overall length

20.0t	20.0t	16.5t	20.0t	16.5t	6.0t
GML [^] : 99.0t					
21.0t	21.0t	17.0t	21.0t	17.0t	6.0t
CML [^] : 101.0t**					
22.5t	22.5t	17.0t	22.5t	17.0t	6.0t
HML [^] : 107.5t***					

IAP required for operation at all mass limits
Operator must be accredited in the Maintenance Module of NHVAS

AB-Triple Combination with Tri-axle Dolly
36.5 metres maximum overall length

20.0t	20.0t	20.0t	16.5t	6.0t
GML [^] : 102.5t				
21.0t	21.0t	21.0t	17.0t	6.0t
CML [^] : 104.5t**				
22.5t	22.5t	22.5t	17.0t	6.0t
HML [^] : 113.5t***				

IAP required for operation at all mass limits
Operator must be accredited in the Maintenance Module of NHVAS

A-Triple/Type 2 Road Train Combination with Tandem Axle Dolly
53.5 metres maximum overall length

20.0t	16.5t	20.0t	16.5t	20.0t	16.5t	6.0t
GML [^] : 115.5t						
21.0t	17.0t	21.0t	17.0t	21.0t	17.0t	6.0t
CML [^] : 117.5t**						

HML

Combination not eligible for operation at Higher Mass Limits

A-Triple/Type 2 Road Train Combination with Tri-Axle Dolly
53.5 metres maximum overall length

20.0t	20.0t	20.0t	20.0t	16.5t	6.0t
GML [^] : 122.5t					
21.0t	21.0t	21.0t	21.0t	17.0t	6.0t
CML [^] : 124.5t**					

HML

Tri-axle converter dollies must be fitted with certified Road Friendly Suspension

Combination not eligible for operation at Higher Mass Limits

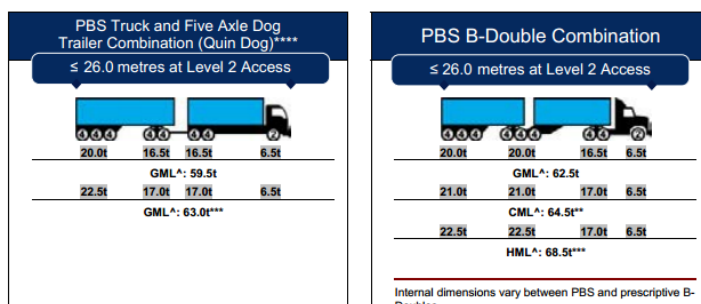
Common BAB Quad Road train



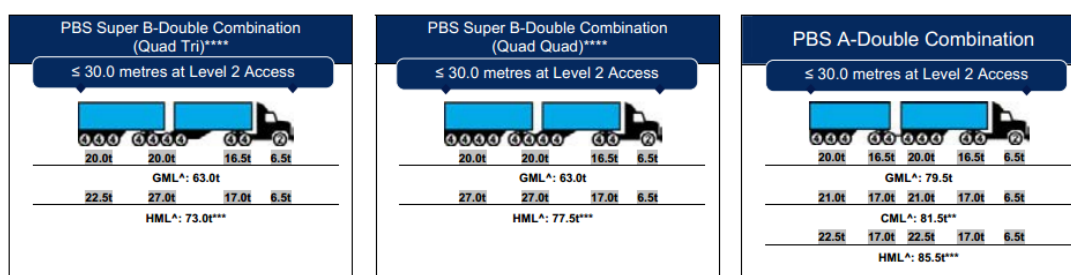
Type of Mass Limits	Maximum Length (metres)	Allowable CVM/CCM (tonnes)	Single Steer Axle (tonnes)	Twin Steer Axle Group (tonnes)	Single Axle (tonnes)	Tandem Axle Group (tonnes)	Triaxle Group (tonnes)
GML	53.5 metres	119.0t	6.0t* 6.0t***	N/A	N/A	16.5t per tandem axle group	20.0t per tri axle group
CML	53.5 metres	121.0t [†]	6.0t**	N/A	N/A	17.0t per tandem axle group	21.0t per tri axle group
HML	53.5 metres	130.0t	6.0t	N/A	N/A	17.0t per tandem axle group	22.5t per tri axle group

Performance Based Standards Approved Combinations

PBS Level 2A – These vehicles have a length limit of 26m. They have access to the approved ‘B-double’ roads.



PBS Level 2B – These vehicles have a length limit of 30m.



*Under Heavy Vehicle (Mass, Dimension and Loading) National Regulation 2013, Steer axle mass exception limits apply as an exception to GML for vehicles with a GVM of 15t or more provided they meet ADR 84 - front under-run protection systems (FUPS), a cabin that complies with UN ECE Regulation no. 29 and an engine complying with the emission control requirement contained in ADR 80/01 (Euro IV engine). These vehicles can operate at 6.5t on the steer axle

** Vehicles accredited under the NHVAS Mass Management Accreditation Scheme are permitted 1 tonne above the total combination mass for a vehicle or vehicle combination with an allowable gross mass not exceeding 55 tonnes and 2 tonnes above the total combination mass for a vehicle or vehicle combination with an allowable gross mass exceeding 55 tonnes.

*** Requirements for HML operation: enrolment into the IAP, accreditation under the NHVAS Mass Management Accreditation Scheme and certified Road Friendly Suspension fitted on all axle and axle groups except the steer axle on the prime mover

**** A PBS Permit is required for operation on NSW Roads.