NHVR
National Heavy Vehicle Regulator

DRAFT
HEAVY VEHICLE PRODUCTIVITY PLAN

2020–2025

Delivering safe, efficient and productive heavy vehicle movements supporting a strong and prosperous Australia

December 2019

About the NHVR

The establishment of the National Heavy Vehicle Regulator (NHVR) was agreed upon under an intergovernmental agreement between all Australian governments. It formally opened for business on 21 January 2013.

As Australia's dedicated, statutory regulator for all vehicles over 4.5 tonnes[1], the NHVR provides leadership and drives sustainable improvements to safety, productivity and efficiency outcomes across the heavy vehicle transport sector and the Australian economy.

The NHVR's purpose and functions are established by the *Heavy Vehicle National Law Act 2012* (Qld), and its activities are guided by its statutory mandate.

Accordingly, the NHVR seeks to ensure public safety, to manage the impact of heavy vehicles on the environment, road infrastructure and public amenity, and to encourage innovation, productivity and safety. To do this, the NHVR works in partnership with the Commonwealth Government, its state and territory counterparts, local governments, other agencies, industry and industry bodies.

Disclaimer

While every care has been taken in preparing this publication, the NHVR accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

Interpreter service statement

The NHVR is committed to providing accessible services to people from all culturally and linguistically diverse backgrounds. If you have difficulty understanding this document, please contact us and we will arrange an interpreter to communicate it to you.

Contact information

For further information about the draft *Heavy Vehicle Productivity Plan 2020-2025* or the NHVR's activities, functions and services, please visit our website or contact us via:

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1 A heavy vehicle is defined in the Heavy Vehicle National Law (HVNL) as a vehicle that has a gross vehicle mass (GVM) or aggregate trailer mass (ATM) of over 4.5 tonnes.

Pre-submission consultation

To inform the development of the draft *Heavy Vehicle Productivity Plan 2020–2025* (the Plan), the NHVR undertook pre-submission engagement with government and industry stakeholders between February 2019 and October 2019. This engagement involved:

- public sector consultation targeting all levels of government and peak government associations
- private sector consultation targeting peak industry associations and heavy vehicle operators
- private sector consultation targeting other bodies and agencies relevant to heavy vehicle access
- forming an Intergovernmental Working Group comprising representatives from the Commonwealth and all state and territory governments except the Northern Territory
- forming a Local Government Association Working Group with representation from all local government associations from HVNL-participating jurisdictions
- hosting an online webinar on 26 June 2019 targeted at local government and industry (see Appendix 1 for registered attendees).

Appendix 2 provides details of the more than 50 government and industry stakeholders who directly participated in the pre-submission consultation process.

How to make a formal submission

The formal submissions process provides a further opportunity for all the NHVR's regulatory partners and other stakeholders to provide additional feedback.

This feedback will be used to inform the final Plan and accompanying Action Plan, with the release date for these currently expected to be in mid-2020.

There is no prescribed format or maximum length for submissions, which may contain facts, opinions, arguments or recommendations.

Submissions over three pages in length should include a summary of key comments and recommendations at the beginning.

Submissions must be submitted via email to info@nhvr.gov.au by 5pm AEST Friday 13 March 2020.

For more information on the submission process, visit www.nhvr.gov.au/about-us/consultation/heavyvehicleproductivityplan.

Publication of submissions

Unless clearly indicated (e.g. marked 'IN CONFIDENCE' or 'CONFIDENTIAL'), submissions received may be made public at the NHVR's discretion.

The NHVR will consider all submissions received by close of submissions, whether published or not.

The NHVR reserves the right to edit or redact part or all of a submission, or withhold a submission from publication on any grounds, including, but not limited to, offensive language, potentially defamatory material or copyright infringing material.

The NHVR privacy policy, including information about access to and correction of personal information, is available at www.nhvr.gov.au/law-policies/privacy.

Foreword

I am pleased to present the NHVR's draft *Heavy Vehicle Productivity Plan 2020–2025* (the Plan) for public consultation.

The Plan outlines our objectives and goals to deliver safe, efficient and productive heavy vehicle movements supporting a strong and prosperous Australia.

It complements and supports government heavy vehicle, freight and supply chain strategies.

While we seek opportunities to improve access and productivity under the current *Heavy Vehicle National Law Act 2012* (HVNL), we believe the Plan will be sufficiently resilient and flexible to adapt to any changes proposed through the National Transport Commission's review of the HVNL.

Through initial research and consultation, we found industry wanted greater access and certainty; the Commonwealth, state and territory governments desired improved consistency and more data to be more effective and efficient; and local governments sought further support for heavy vehicle access and road infrastructure decisions.

Critically, both industry and government prioritised safer and more productive vehicles that are better for the economy, environment and communities.

The Plan provides stakeholders with the opportunity to further refine the objectives and goals through this formal submissions process. We believe that only through comprehensive government and industry engagement can we develop an Action Plan that considers the ambitions of all our stakeholders.

Issues and initiatives identified through the formal submissions process will be thoroughly reviewed and considered for implementation in the Action Plan. The Action Plan will form part of the final *Heavy Vehicle Productivity Plan* to be released in 2020.

The NHVR operates in a dynamic environment and remains committed to being a modern regulator with modern practices. We will continue to engage and listen to government and industry, and use technology, data and policies to deliver positive outcomes.

The NHVR and all its stakeholders have a role in delivering the objectives and goals outlined in the Plan. Collaboration in proactive delivery with industry and government will maximise our opportunities for success.

The NHVR Board and Executive Leadership Team value your commitment and contribution, and we look forward to working together to deliver the final Plan and associated Action Plan.

Sal Petroccitto
CEO

The process to deliver the *Heavy Vehicle Productivity Plan 2020–2025*

The NHVR's stakeholder profile

200,000 people in the Australian road freight industry[1]

425 road managers under the HVNL

50,000 Australian road freight businesses[2]

6 HVNL participating jurisdictions[3]

Australia's heavy vehicle profile[4]

19.5 MILLION registered motor vehicles

103,038 articulated trucks

353,759 heavy rigid trucks

99,379 buses

1 Australian Bureau of Statistics, 2018, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, Nov 2018
2 Australian Bureau of Statistics, 2018, 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2013 to June 2017
3 The Australian Capital Territory, New South Wales, Queensland, South Australia, Tasmania and Victoria.
4 Australian Bureau of Statistics, 2018, 9309.0 - Motor Vehicle Census, Australia, 31 January 2019

Contents

The national road freight and heavy vehicle access picture

Access permits and notices by the numbers

Over **200,000** single access permit applications processed by the NHVR since inception[1]

Over **40,000** single access permit applications processed by the NHVR in 2018–19:

94% of all applications approved

99% of renewal applications approved

Requested routes: 1 to over **900** per permit

Road managers: 1 to over **70** per permit – **1.7** road managers involved in an average permit

Over **120** national, state and transitional notices

Over **2,000** pre-approved routes covering over **43,000KM** of road

Pre-approvals reduce end-to-end permit issue time by **68%**

8.9% of granted consents made by pre-approval with average permit issue time of **4.55** days

91.1% of granted consents made with no pre-approval with average permit issue time of **14.18** days

Consent request: Local government road managers in 2018–19:

93% approved within 28 days with average turnaround of **5.5** days

7% approved outside of 28 days with average turnaround of **67** days

Consent requests: State government road managers in 2018–19:

93% approved within 28 days with average turnaround of **4.9** days

7% approved outside of 28 days with average turnaround of **63.8** days

Australia's growing freight task

The Australian economy is the **13TH LARGEST** globally but Australia has the **FIFTH LARGEST** freight task[2]

Australia's road freight task is growing almost **TWICE AS FAST** as its population.[3,4]

Total freight task is over **738 BILLION** tonne kilometres – **80%** growth between 2010 and 2030[5]

163 tonnes of freight is moved per person per year[6]

Road freight task is over **214 BILLION** tonne kilometres[7]

Almost **30%** of all freight is moved by road[8]

Road freight movements:
75% within and **25%** between state and territory borders[9]

Road transport = **$137 BILLION** in economic output[10]

1 A single access permit application may involve more than one road manager
2 Organisation for Economic Co-operation and Development, 2018, *Freight transport*
3 Bureau of Infrastructure, Transport and Regional Economics, 2018, *Australian Infrastructure Statistics Yearbook 2018*, Australian Government
4 Australian Bureau of Statistics, 2018, *3101.0 - Australian Demographic Statistics, Dec 2014, Dec 2015, Dec 2016, Dec 2017, Dec 2018*
5 Department of Infrastructure, Regional Development and Cities, 2018, *Inquiry into National Freight and Supply Chain Priorities – Report March 2018*, Australian Government
6 Ibid
7 Ibid
8 Ibid
9 NTC, 2016, *Who Moves What Where: Freight and Passenger Transport in Australia*
10 Australian Bureau of Statistics, 2018, *5270.0 - Australian Transport Economic Account: An Experimental Transport Satellite Account*

About the draft Heavy Vehicle Productivity Plan

Background

The NHVR is Australia's dedicated statutory regulator for all heavy vehicles over 4.5 tonnes gross vehicle mass or aggregate trailer mass. It also has a direct regulatory relationship with all levels of government and the heavy vehicle industry.

The NHVR is uniquely positioned to support a national approach to addressing Australia's growing road freight task, and is committed to achieving access and productivity outcomes for the benefit of its government and industry partners and the community at large.

The NHVR's *Heavy Vehicle Productivity Plan 2020–2025* (the Plan) outlines the NHVR's goals and objectives to facilitate safe, efficient and productive heavy vehicle movements to support Australia's rapidly growing freight task.

While it is not intended to encompass the NHVR's full future work program, the Plan articulates actions that will be undertaken to improve access and productivity over the next five years.

Achieving genuine safety outcomes is also a key focus of the Plan.

The Plan complements and supports government heavy vehicle, freight and supply chain strategies.

The support of the Commonwealth, state, territory and local governments and industry will be vital to delivering certain actions, and the NHVR will partner with relevant stakeholders where required.

Objectives

The Plan has three objectives that resulted from extensive literature research and pre-submission consultation with government and industry stakeholders. These objectives are:

Objective 1: Provide access certainty and consistency

Objective 2: Partner with local government to build capability

Objective 3: Promote safer and more productive vehicles that are better for the environment and communities

Key desired outcomes of these objectives include:

- removing the need for access permits for a broader range of heavy vehicles
- removing the need for road managers to assess repeat applications when considered safe and sustainable
- encouraging access decisions that promote both productivity and infrastructure longevity
- educating and supporting local government
- acquiring and sharing data and analytics on road assets and heavy vehicle movements.

Action Plan

An Action Plan and associated performance measurements and targets will be developed after submissions have been reviewed. This will ensure that stakeholder feedback, including any proposed recommendations, have been adequately considered.

The Action Plan will be released in 2020 as an accompanying document to the final Plan, and will serve as a comprehensive response to submissions received.

Stakeholder feedback will assist in refining the Plan, determining performance measurements and targets, estimating timeframes for deliverables, and confirming the relevant stakeholders with whom the NHVR will partner to deliver actions (where applicable).

The HVNL Review

The National Transport Commission (NTC) commenced a review of the *Heavy Vehicle National Law Act 2012* (Qld)(HVNL) in late 2018 to create a more performance-based and outcomes-focused law.

Consultation by the NTC will continue until May 2020. The dates for drafting and enacting the new HVNL have not yet been announced.

The Plan focuses on policies and activities that are both deliverable under the current HVNL and sufficiently flexible to adapt to a new HVNL. This will allow the NHVR to deliver immediate improvements to access and productivity before the new HVNL is enacted.

The Plan also provides the opportunity to commence delivery of a longer-term, modern access regime under the new HVNL, including mechanisms to support the adoption of risk-based access.

The NHVR and others support a transition to a risk-based approach. This is demonstrated through government and industry submissions to the first NTC HVNL Review issues paper *Risk-based heavy vehicle regulation*.

Amendment disclaimer

The final Plan may be updated to reflect any feedback received during the formal submissions process, and any recommendations tabled by the finalised HVNL Review and the P*roductivity Commission Inquiry into National Transport Regulatory Reform* that have a material impact on the role and functions of the NHVR.

Strategic direction

The NHVR Corporate Plan 2019–2022

The Plan is aligned with the *NHVR Corporate Plan 2019–2022*, prepared under the HVNL and approved by responsible Ministers. The Corporate Plan articulates the NHVR's agenda over the next three years regarding:

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

Inquiry into National Transport Regulatory Reform

The Productivity Commission has led an inquiry to assess the economic impact of reforms to transport regulation agreed to by the Council of Australian Governments in 2008–09.

The scope includes national heavy vehicle transport regulatory reform, in addition to that of other transport modes. The Plan has been drafted to consider this inquiry.

Consultation is ongoing, with the final report to the Commonwealth Government to be released in April 2020. The date for public release of the final report has not yet been announced.

Alignment with government plans and strategies

The Commonwealth Government's *National Freight and Supply Chain Strategy, Review of Oversize Overmass (OSOM) Access Arrangements* (the OSOM Review), work by the NTC and Austroads, and state and territory government freight plans and strategies informed the development of the Plan (refer to Figure 1 for primary reference material).

Of note is that government documents collectively recognise the significance of heavy vehicles in supporting the growing freight task and predominantly focus on infrastructure outcomes to improve road freight productivity. The NHVR is not an infrastructure provider but supports the continuation of government infrastructure investment.

The Productivity Commission warns that infrastructure alone will not be enough to support road freight in Australia[1], and first and last mile funding remains a significant challenge for local government.[2] The Plan therefore proposes non-infrastructure initiatives within the NHVR's ambit to support and complement government infrastructure investment.

The Plan aligns with and complements the heavy vehicle and road freight objectives identified by the NHVR's government partners, inclusive of how the NHVR intends to implement aspects of agreed recommendations where it is a relevant and suitably responsible party. Importantly, the Plan also confirms the NHVR's commitment to supporting government partners to deliver some of their initiatives.

Figure 1: Primary reference material that has informed the draft Heavy Vehicle Productivity Plan 2020-2025

1 Productivity Commission, 2017, *Shifting the Dial: 5 year productivity review*, Australian Government
2 Australian Local Government Association, 2019, *2019 Local Government Roads and Transport Agenda*

Priority outcomes

The objectives in the following sections detail the proposed goals and actions to achieve the below priority outcomes and deliver on the intent of the Plan:

- data and technology that provide a better understanding of heavy vehicle networks, road usage and the pinch-points preventing access on desired routes
- promoting an evidence-based and outcomes-focused access regime with effective, efficient, equitable and transparent access decisions
- progressive regulatory reform and enhanced regulatory services that enable access to suitable routes and encourage the continual modernisation of Australia's heavy vehicle fleet
- educating and supporting local government to build capability
- assisting road managers, particularly local government, to understand infrastructure quality on key heavy vehicle networks
- enabling government and industry to identify and better advocate for targeted investment in key freight roads and bridges.

These priority outcomes were determined based on feedback received from more than 50 government and industry stakeholders during the pre-submission consultation process.

Supporting information

A summary of important background information that supports the proposed goals and actions is provided in:

- Appendix 3: Understanding heavy vehicle access under the NHVR
- Appendix 4: Heavy vehicle data acquisition and enrichment under the NHVR
- Appendix 5: The Performance Based Standards scheme.

Objective 1: Provide access certainty and consistency

Goal 1: Increase gazetted and pre-approved networks to remove the majority of permits for low-risk movements

Overview

The NHVR envisions a future where permits are required by exception rather than as a rule (e.g. for high-risk movements requiring special conditions or new routes not previously assessed). Maximising the use of roads by creating end-to-end networks is critical to delivering significant economic benefits across the country.

In 2018–19, the NHVR processed over 40,000 single access permit applications. Of these, 94 per cent of new applications were approved and 99 per cent of renewal applications were approved with little to no change to previous conditions applied.

Based on the fact that applications are almost always approved, and most journeys have, at least in part, been travelled before, many risks on key freight routes should be known to road managers, given the route assessments undertaken to provide their consent.

Understanding demand and volume on consented routes will assist in identifying and prioritising initiatives that support improved access and certainty for low-risk movements.

Gazetted and pre-approved networks are examples of how the NHVR partners with road managers to improve access and certainty for industry use of specific vehicles on specific roads. They also remove the need for road managers to repeat route assessments, allowing them to focus on responding to more complex applications.

Use evidence from the NHVR Portal to expand gazetted and pre-approved networks

Working smarter and continuing to deliver a stronger evidence base is vital to partnering with road managers to expand gazetted and pre-approved networks.

The NHVR will use trend information from completed applications processed through the NHVR Portal to identify potential gazetted and pre-approved network opportunities, including those that may not have previously been considered.

Where a trend indicates significant repetitive applications and granted consents, a substantiated case can be presented more frequently to road managers.

Where pre-approvals exist, the NHVR will work closely with road managers to actively transfer pre-approved networks to gazetted networks, which removes the need for industry to apply for permits.

Deliver more notices with consistent and rationalised operating conditions

Notices enable permit-free access and provide the opportunity to improve consistency in operating conditions within and between state and territory borders.

Currently there are over 120 national, state and transitional notices, and more are being delivered by the NHVR in partnership with jurisdictions and road managers.

Important notices delivered to date include the *National Class 1 Special Purpose Vehicles Notice 2016*, which the NHVR estimates will benefit the economy by $130 million over 20 years, and the *National Class 1 Agricultural Vehicle and Combination Notice 2019*, which industry estimates will eliminate permit requirements for 80 per cent of Australia's agricultural fleet.

New notices should continue to be prioritised by similarly quantifiable benefits or to support critical industries, such as the agricultural sector during periods of drought.

Continuing to improve access and consistency for the OSOM and Special Purpose Vehicle (SPV) industries is a key outcome for the NHVR. In particular, the NHVR supports the OSOM Review recommendation for the Commonwealth Government and jurisdictions to resolve inconsistent pilot and escort conditions through the Transport and Infrastructure Council.

Industry also has a role to play in successfully delivering new notices, for example by providing data and research on the vehicle fleet and vehicle performance, communications and engagement to ensure industry is aware of potential changes to the access environment, and education on understanding any new obligations.

Key notices planned for delivery include the livestock loading and grain harvest management schemes, over-dimension transport of baled commodities, and extending the OSOM and SPV notices and gazetted networks.

Improve collective commitment to deliver national notices

Legacy policy issues at a jurisdictional level have played a significant role in delaying or preventing the delivery of national notices.

The NHVR recommends that a strong governance model is developed and agreed to by government stakeholders, so the NHVR can work collaboratively and expeditiously with these parties. Arrangements to deliver new national notices must include agreement on milestones, timeframes, and the scope and level of harmonisation.

An agreed compromise at a 'middle ground' to achieve 100 per cent harmonisation across borders may be counterproductive. Legacy arrangements may need to genuinely be protected for significant local economic reasons not relevant to other areas. Rationalisation and/or consolidation of access exemptions and conditions may therefore be more suitable outcomes in some situations instead of full harmonisation.

Provide transparency to access decisions

Road managers and industry have recommended that historic access permit applications be made more openly accessible. This information will assist in helping industry and road managers work more closely together to identify potential gazetted and pre-approved network opportunities.

Easy access to granular information (e.g. by vehicle type, mass or dimension) on previously granted or refused routes would also ensure the most suitable routes are being used by industry, reduce the need for road managers to conduct unnecessary repetitive assessments, preserve valuable road manager knowledge and enable more officers to participate in the route assessment process.

Figure 2 shows an example of how historic access decisions could be displayed to assist road managers and industry.

Historic access decisions could also be used to enable intelligent routing within the NHVR Portal's Route Planner tool. Optimising access permit applications onto pre-approved and gazetted networks or previously permitted roads for similar vehicles will expedite the end-to-end process.

To increase gazetted and pre-approved networks to remove the majority of permits for low-risk movement, the NHVR proposes to:

- continue to partner with road managers to expand gazetted and pre-approved networks and transition pre-approvals to gazettals
- continue to partner with jurisdictions, road managers and industry to develop and deliver new notices
- implement agreed recommendations from the OSOM Review, where the NHVR is a relevant and suitably responsible party
- partner with Austroads and jurisdictions to review OSOM and SPV mass and dimension limits, vehicle types and access conditions originally developed by the National Association of Australian State Road Authorities in 1981
- partner with jurisdictions to develop an agreed governance framework for new notices
- evaluate and develop digital tools that quantify and map historic access permit decisions by road for different vehicle types (approved, approved with conditions and refused)
- evaluate and develop digital tools that enable intelligent routing within the NHVR Portal's Route Planner tool.

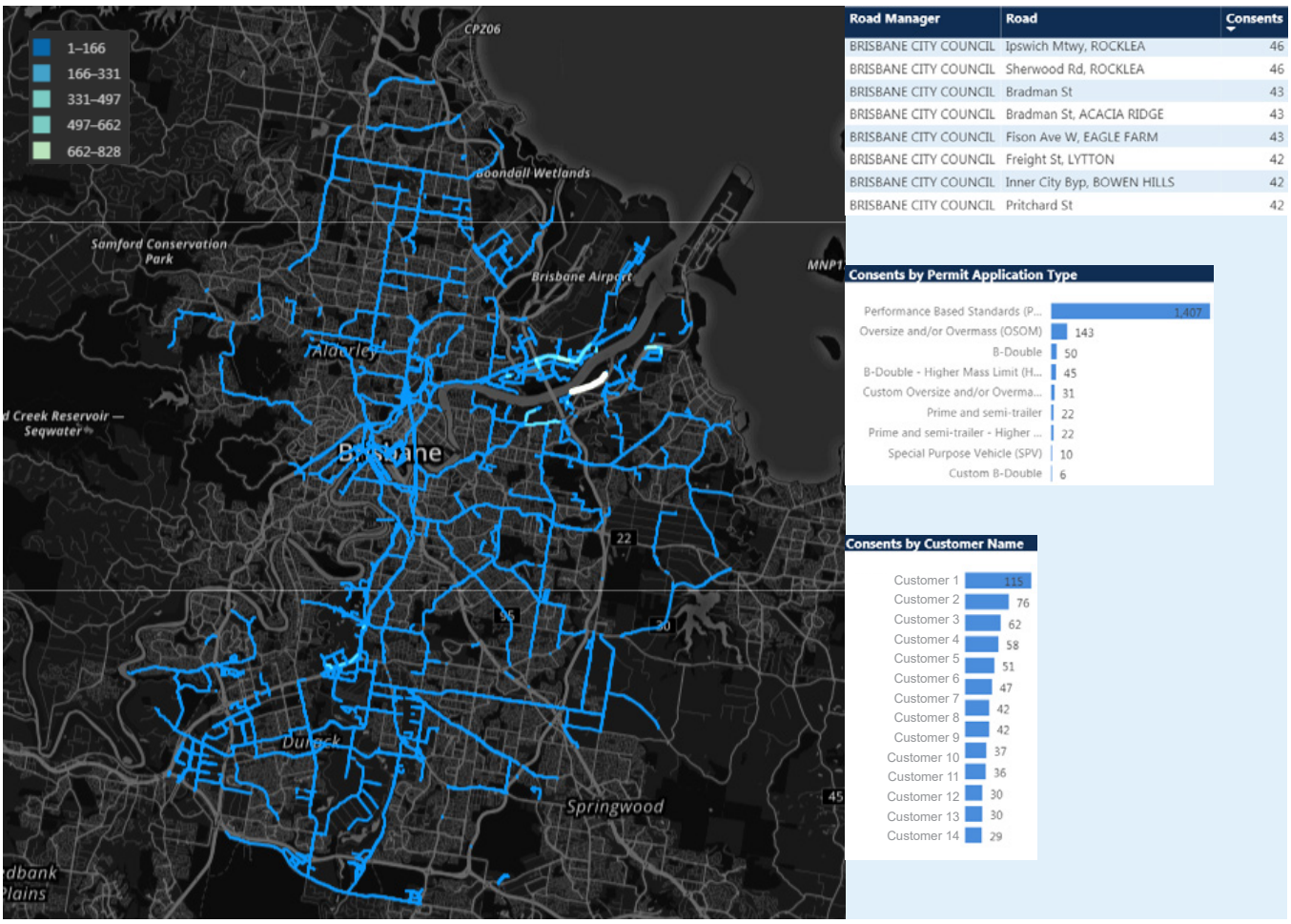


Figure 2: Applications processed through the NHVR Portal for Brisbane City Council as a road manager in 2018–19

Goal 2: Provide greater certainty for PBS vehicles

Overview

Collectively, governments have a responsibility to ensure heavy vehicles can meet the country's growing freight task, which means delivering more goods with fewer vehicles in a safe manner. Without greater certainty for PBS vehicles, the benefits that can be delivered to the economy and community from the PBS scheme will be lost (see Appendix 5).

The HVNL was amended on 1 October 2018 to provide general access to PBS Level 1 vehicles operating at General Mass Limits (GML), and two notices have been developed for some PBS Level 1 and Level 2 vehicles.[1] These access reforms have predominantly benefited PBS truck and dogs, resulting in more of these combinations being commissioned compared to other PBS vehicles. For example, in 2018, 1,069 PBS truck and dog combinations were approved compared to 269 B-doubles.

The success of PBS truck and dogs also shows that when access restrictions are removed, a safer and more-productive replacement becomes industry's first choice of vehicle (e.g. PBS four-axle and above dog trailers dominate the market segment, with up to 90 per cent market share[2]).

Provide access to equivalent prescriptive gazetted networks

Permit-free access is limited for many PBS vehicles. Where mass and length are not prohibitive, the latent capacity of existing infrastructure should be exploited to eliminate permit requirements.

For example, currently an approved PBS Level 2A B-double at GML with safer on-road performance has no access to gazetted routes under notice, whereas its prescriptive equivalent—the 26m B-double—benefits from a broad gazetted network (Table 1). No access is currently provided to PBS Level 3A and 4A vehicles under notice.

This approach does not align with the intent of the PBS scheme and prohibits better-performing PBS vehicles from optimally operating on suitable equivalent prescriptive gazetted networks that have already been assessed and established by road managers.

The NHVR and road managers need to work together to collectively open up access on equivalent prescriptive gazetted networks for PBS vehicles—by notice or by additional changes to the HVNL.

Provide improved data to open up access on PBS-specific networks

It is relatively easy to develop PBS-length networks for longer PBS vehicles, as route assessment only needs to consider vehicle length (e.g. the stacking distance between certain intersections may fit 26 metre B-doubles but not 30 metre PBS Level 2B vehicles).

Developing PBS mass networks for heavier Tier 2 and Tier 3 PBS vehicles requires road managers to undertake complex bridge assessments. This process is difficult, given significant variation in the load effects of different PBS vehicles even within the same PBS level (due to mass and axle spacing).

Inadequate access to PBS configuration data is hindering road managers from undertaking bridge assessments to support the development of PBS mass networks for Tier 2 and Tier 3 vehicles. PBS configuration data is available on individual PBS vehicle approvals; however, axle spacing data to support bridge assessments requires deciphering of drawings.

Providing comprehensive configuration data to road managers for a broad range of PBS vehicles will allow them to undertake more efficient geometric and structural analysis.

The NHVR, PBS manufacturers and industry have a shared role to ensure road managers have easy access to this information, so they can open up access via notice to PBS networks developed specifically for longer and heavier PBS vehicles.

Provide performance information to road managers to increase permit access

Despite the safety and productivity benefits that PBS vehicles deliver, obtaining access permit approvals from multiple road managers is still a major hurdle.[3]

Knowing specific performance characteristics can eliminate the need to undertake certain assessments, influence access outcomes, assist in increasing road manager understanding of PBS vehicles, and improve approval rates and response times.

Currently, it is not compulsory for industry to provide road managers with the performance results of specific PBS vehicles. If no detail is provided, route assessments are conducted using the 'worst-case scenario' (e.g. the Low Speed Swept Path of PBS Level 2 vehicles will never exceed 8.7 metres). Performance results may be provided upon request, but this is a practice seldom exercised by road managers.

A road manager may condition or refuse the request based on their route assessments. If the performance of the vehicle was in fact 'better' and known, then the road manager may have approved the request or may not have applied certain conditions to their approval.

To provide greater certainty for PBS vehicles, the NHVR proposes to:

- continue to work with road managers to eliminate access permit requirements for PBS vehicles on existing equivalent prescriptive gazetted networks and on PBS-specific networks under notice
- partner with industry to provide road managers with PBS configuration data to support the development of PBS-specific networks under notice for longer and heavier PBS vehicles
- partner with industry to provide road managers with vehicle performance information to assist in their route assessments for PBS access permit applications.

Table 1: Example of current access comparison – Prescriptive B-double versus PBS 2A B-double

Vehicle description	Axle Group Mass (GML)	Maximum Dimension (m) Length	Height	Width	Maximum Low Speed Swept Path (m)	Fitment of Safety Technology	Access to gazetted 26m B-double routes
9-Axle B-double (Prescriptive)	 6.5t 16.5t 20.0t 20.0t	26	4.3	2.5	9.1	ABS	Yes Access allowed under notice
9-Axle B-double (PBS 2A)	 6.5t 16.5t 20.0t 20.0t	26	4.6	2.5	8.7	ABS, ESC, RSC	No Access permit is required

1 The *National Class 2 PBS Level 1 & 2A Truck and Dog Trailer Authorisation Notice 2016* and the *Queensland Class 2 Performance Based Standards A-Double (Toowoomba to Port of Brisbane) Authorisation Notice 2018.*
2 NHVR and ARTSA, 2019, *Performance Based Standards – Australia's PBS fleet*A
3 NTC, 2017, *Assessing the effectiveness of the PBS Scheme Discussion Paper – August 2017*

Goal 3: Understand the real capacity and capability of roads and bridges on key freight routes

Overview

Currently, there is limited information available regarding the true capacity and capability of road and bridges on key freight routes, particularly on local government roads. There is also no centralised source for accessing this information in a transparent way for industry and governments.

The Commonwealth Government's National Freight and Supply Chain Strategy and the OSOM Review call for a centralised approach to collecting and sharing asset data, highlighting it as integral to facilitating heavy vehicle access. However, this task remains challenging for all levels of government and, critically, data may not exist in some cases.

Understanding the real capacity of key roads and bridges will allow the NHVR, road managers and industry to better match the right heavy vehicle to the right network, opening up new access possibilities in a safe and more productive way, as well as making sure funding is targeted where it is needed most.

Deliver the Strategic Local Government Asset Assessment Project

The Commonwealth Government recently allocated $8 million to the NHVR to undertake infrastructure assessments on behalf of local government, to assist them to understand the capacity and capability of their roads and bridges in accordance with a consistent method and assessment criteria.

An evidence-based framework is being developed to identify assets on key freight routes and to prioritise the schedule of assessments.

The Strategic Local Government Asset Assessment Project, as it is known, will assist to provision access where collected data suggests it is safe to do so. The data will also assist local government to build a case to acquire funding for infrastructure upgrades to provide future access.

The NHVR will work with the Commonwealth Government to establish an ongoing program of works to continue to support local government to better understand infrastructure quality on key freight routes.

Collaborate to access and share infrastructure information from Heavy Vehicle Road Reform

The Commonwealth Government[1] and Austroads[2] are developing the standards and procedures for collecting and storing road asset data to support Heavy Vehicle Road Reform (HVRR). Their work intends to cater for different levels of road asset data complexity, and to accommodate the resources and capabilities of the smallest to largest road managers.

HVRR provides a future opportunity for NHVR systems to integrate and interface with Commonwealth Government systems to consume fields of road asset data they have collected relevant to heavy vehicle access across all road managers.

Collaborate to access and share infrastructure information from road managers

While the existing availability and quality of road asset data is disparate among different road managers, this information is still useful. A collaborative and centralised model for managing and sharing available and useable asset data will play a critical role in delivering a national risk-based approach to access.

To enable this opportunity, it needs to be understood what data is available and its currency, which data fields are relevant to access decisions, how the data is structured and managed, who owns it, and under what conditions it could it be shared.

The preferred method for obtaining existing valuable asset data on key freight routes is through data-sharing agreements. Ideally data acquisition should adopt a self-service model, where road managers populate an NHVR-built digital tool (as required) or the tool automatically consumes available information (e.g. via RSS feeds from a government open data website).

Data-sharing agreements will formalise information sharing between road managers and the NHVR, and ensure information is being used appropriately. The NHVR has achieved success in implementing data-sharing agreements through its Safety and Compliance Regulatory Platform (SCRP).

Building a national map of roads and bridges

Improved visibility of road assets and their condition will allow the NHVR, government and industry to better match heavy vehicles to suitable routes. This information can be as simple as displaying existing GIS layers, with height restrictions or complex structural information obtained from bridge inspections.

This information could be displayed on the NHVR Portal Route Planner tool, with analytics performed by the NHVR's suite of back-end digital products to inform operator applications or road manager assessment decisions.

To understand the real capacity and capability of roads and bridges on key freight routes, the NHVR proposes to:

- develop and deliver the Strategic Local Government Asset Assessment Project to assist local government to better understand the capacity and capability of their roads and bridges on key freight routes
- work with the Commonwealth Government to continue delivering the Strategic Local Government Asset Assessment Project beyond the current funded program
- enhance and expand the NHVR's data acquisition agenda to include road asset data relevant to heavy vehicle access decision-making on key freight routes, obtained via data-sharing agreements with the Commonwealth Government and road managers
- build a national map of roads and bridges through evaluating and developing digital tools that provide a central platform to consistently store, manage and view asset information.

1 Department of Infrastructure, Regional Development and Cities, 2016, *Heavy Vehicle Road Reform – What we are doing and why we are doing it*, Australian Government
2 Austroads, 2018, *Data standard for road management and investment in Australia and New Zealand*

Goal 4: Understand how de-identified movement data can improve access

Overview

There is strong perceived value in governments and industry acting smarter by partnering to share and use GPS tracking data to achieve economic outcomes. The focus on GPS tracking data recognises that the full suite of information collected by telematics is not required to understand heavy vehicle movements and make informed access-decisions.

During the pre-submission consultation, road managers suggested that awareness of movement volume could encourage the adoption of a lower risk profile. Importantly, some road managers suggested that, in some cases, they would be more likely to grant approvals, provide quicker responses and apply fewer conditions if they were given greater assurance of what vehicles were moving where and how often, and if this data was provided with regularity.

Consultation with peak industry associations and large operators indicated that industry would be willing to voluntarily share de-identified GPS tracking data if there was a commitment regarding its use for access reasons and in accordance with decision-making principles.

Industry GPS tracking data: IAP and alternative telematics systems

The HVNL prescribes the Intelligent Access Program (IAP) as the regulatory telematics program in Australia for productivity and compliance reasons (e.g. IAP is a requirement for the operation of certain mobile cranes). Section 433 of the HVNL allows for the release and use of IAP information for research purposes, if the information contains no personal information. However, IAP is not installed on most heavy vehicles[1] GPS tracking data from IAP therefore only represents a small portion of total heavy vehicle movements.

Most medium to large road transport companies already utilise non-IAP telematics and other proprietary technology systems to meet a range of complex business needs. These systems vary considerably, and involve a substantial investment to address specific tasks or needs in regard to safety and productivity.

Government telematics data collection programs

Through the Australian Transport Data Action Network, the Bureau of Infrastructure, Transport and Regional Economics has been leading a road freight telematics data collection program, supported by the Australian Bureau of Statistics and industry. The aim of this program is to collect and provide timely and detailed information on heavy vehicle movements from a range of industry telematics systems, to inform infrastructure planning.

The Commonwealth Government, supported by Transport Certification Australia (TCA), has also commenced a National Heavy Vehicle Charging Pilot to support future HVRR.[2] This pilot includes testing a broad range of data collection options to acquire vehicle position, distance and location data from industry for planning and investment decision-making.[3]

State and territory governments also collect data from IAP and non-IAP telematics systems for research, infrastructure protection and access improvement initiatives (e.g. TCA's Road Infrastructure Management and Telematics Monitoring Application under the National Telematics Framework).

National visibility of heavy vehicle movements

It is important to leverage off investments already made by government and industry by seeking GPS tracking data from the entire telematics ecosystem.

Comprehensive national visibility of heavy vehicle movements, from multiple reliable sources with varying levels of assurance, is valuable for understanding trends, emerging demands and pinch-points on the entirety of Australia's road network—not just for state- and territory-controlled roads, in a particular local government area or for a specific operator.

Partner with government and industry to agree to the benefits of sharing GPS tracking data

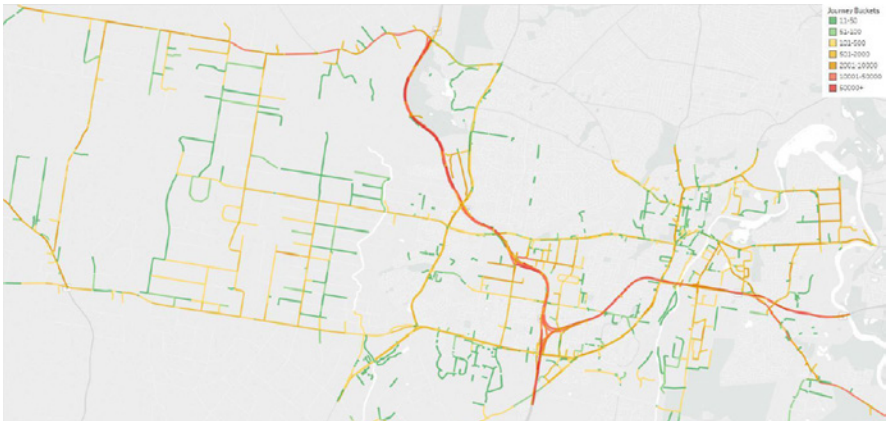
It will be essential to establish data-sharing protocols so industry knows its data is protected and only used for the way in which it was intended. The NHVR is in a unique position—as a regulator rather than a road manager—to reset and reframe the use of telematics and GPS tracking data so they are seen as access-enabling tools rather than compliance tools .

As road managers and the NHVR obtain more movement data, the performance of the entire supply chain will progressively improve through increased awareness and commensurate network optimisation possibilities (e.g. the evidence base to upgrade roads or gazette roads under notice).

To understand how de-identified movement data can improve access, the NHVR proposes to:

- enhance and expand its data acquisition agenda to include GPS tracking data, obtained via data sharing agreements with government, TCA and industry
- partner with road managers and industry to establish an agreed framework for sharing and interpreting GPS tracking data to enable greater access and productivity
- evaluate and develop digital tools that provide a common platform to consistently store, manage and view GPS tracking data in a manner that balances visibility for government against privacy for industry.

Figure 3: Area heat-map of SPV movements in a Local Government Area[4]



1 Deloitte Access Economics, 2019, *Economic benefits of improved regulation in the Australian trucking industry*, Australian Trucking Association
2 Department of Infrastructure, Regional Development and Cities, 2016, *Heavy Vehicle Road Reform – What we are doing and why we are doing it*, Australian Government
3 Austroads, 2019, *Key freight routes – heavy vehicle usage data project*
4 TCA, 2019, TCA *Analytics Overview*

Goal 5: Deliver a modern risk-based approach to access based on infrastructure capabilities

Overview

A modern, risk-based approach to access would enable a wider range of vehicles (with the same performance) to access roads, through road managers assessing and consenting to an agreed and transparent set of infrastructure parameters instead of consenting to individual vehicles (e.g. the maximum mass or dimension limits for a given road or bridge).

A modern, risk-based approach requires a shared responsibility, where road managers are required to know their infrastructure capabilities and industry is responsible for appropriately self-assessing its vehicles in line with these capabilities.

Any vehicle that is determined to be able to be safely accommodated within nationally agreed infrastructure tolerances should be granted access. The approach would include the ability for road managers to identify clear 'no go zones', where certain heavy vehicles on certain roads would come at an unacceptable risk to public safety, amenity or infrastructure.

A modern, risk-based approach should not diminish road managers' rights to approve or refuse access, but would instead greatly increase transparency and speed in providing access decisions.

Tasmanian Department of State Growth OSOM and SPV Access Project

In 2015, the Department of State Growth (DSG) commenced a project to maximise access for OSOM and SPV movements while protecting road infrastructure. The two notices developed by DSG, in conjunction with the NHVR, aim to remove permit requirements for approximately 80 per cent of OSOM movements and 95 per cent of SPV movements in Tasmania. The notices are supported by online maps identifying approved routes, conditions of travel and 'no go zones'.

Key to delivering this access model is:

- a central government body funding and coordinating the assessment of key road infrastructure to develop comprehensive integrated networks
- supporting local government to better understand how their infrastructure could accommodate heavy vehicles
- the development of an access framework where categories of heavy vehicles are granted/refused access to tailored vehicle-specific networks in ways that reflect their relative risk to relevant road infrastructure
- ensuring the access framework is understood and agreed by government and industry stakeholders.

The DSG project is an example of how to develop and implement a successful modern, risk-based approach to access. The initiative also serves as a model to learn from and adapt for expansion on a national scale and for other non-OSOM heavy vehicles.

Developing a national risk-based access model

The NHVR will work with road managers and industry to start developing and agreeing to a national, risk-based access model. The model will be dependent on the following elements:

- agreed *National Risk-based Infrastructure Parameters* (including asset data requirements)
- road managers knowing the capabilities and limitations of their roads and bridges
- agreed public safety and amenity decision-making principles that are consistent and sensible
- agreed infrastructure decision-making principles that are risk-based
- geospatial mapping of approved and conditioned networks and 'no go zones'
- self-assessment by industry and GPS tracking of heavy vehicles as an assurance mechanism.

To deliver a modern, risk-based approach to access based on infrastructure capabilities, the NHVR proposes to:

- develop an agreed national, risk-based access model, in partnership with road managers and industry
- commence implementing the national, risk-based access model across participating jurisdictions, subject to government funding and partnership with road managers and industry.

Objective 2: Partner with local government to build capability

Goal 1: Develop an education and support program for local government

Overview

Consultation with road managers, in particular local government, identified the following issues that can affect timely, accurate and consistent decisions:

- varying understanding of the infrastructure impacts and safety and environmental performance of different heavy vehicles
- uncertainty regarding the engineering assessments required for different heavy vehicles on different roads and bridges
- not all road managers are engineers, and specialist engineers may not be available to provide advice
- high road manager turnover results in the loss of valuable accumulated corporate knowledge
- elected representatives have intervened in the decision-making process in response to constituent concerns about heavy vehicle use in local areas.

Education to improve capability

The NHVR's education activities focus on direct engagement with road managers, in particular local government, and bringing them together with industry.

For example, in October 2019, the NHVR hosted a heavy vehicle access forum to help council engineers understand how to make informed decisions on PBS access and the benefits of PBS vehicles on their road networks. The two-day event also included presentations from the NHVR and industry experts, and field trips to crane, PBS and OSOM operators.

Continuing to educate road managers, and expanding education and training methods and material, will further improve road managers' capability and confidence to ensure future access decisions are informed, consistent and timely. This may include providing new information sheets, workshops, online webinars and eLearning.

Education is a shared responsibility, and the Commonwealth Government, jurisdictions and local government also have a role to play to ensure a minimum acceptable national standard of knowledge and capability.

Implementing Heavy Vehicle Access Liaison Officers

Most jurisdictions' freight strategies communicate an intention and willingness to support local government. The NHVR supports the OSOM Review recommendation that having a Heavy Vehicle Access Liaison Officer (HVALO) in each jurisdiction would offer significant benefits to local government.

The NHVR and the Local Government Association of Queensland have piloted a Queensland HVALO since 2017. The NHVR is working with the South Australian Department of Planning, Transport and Infrastructure to implement a HVALO in South Australia. Other participating jurisdictions are yet to finalise positions and funding models for a HVALO.

The Queensland HVALO is integral to relationship building between stakeholders, proactively assists local government to understand its freight task, and has led the development and delivery of training on heavy vehicles and route assessments across regional and urban Queensland. This has proven to be a successful support model that represents the interests of, and acts on behalf of, local government.

To develop an education and support program for local government, the NHVR proposes to:

- partner with government at all levels to continue the delivery and expansion of education and training to road managers on heavy vehicle performance and route assessments
- investigate the development of an accredited training program that contributes to professional status credits, such as Continuing Professional Development for chartered engineers
- continue to encourage the Commonwealth Government and jurisdictions to progress and fund the OSOM Review recommendation to implement HVALOs.

Goal 2: Equip local government with route assessment products

Overview

One operator can have a different access outcome than another operator for the same freight task, due to a different assessment method being applied, despite relevant vehicle and route factors being the same. It is critical that assessments are undertaken in a consistent manner to ensure equity and fairness for industry.

Significant variation in vehicle type, axle mass, axle spacing and bridge construction makes assessing the structural capacity of a bridge a complex, costly and resource-consuming task, which acts as a barrier to timely access decisions. Some road managers also do not have easy access to qualified bridge engineers.

Road managers have in the past refused to grant access to PBS A-Doubles operating at GML in a belief that this will protect roads from pavement deterioration, but these refusals are causing more damage over time compared to the impact of smaller general access vehicles required to complete the same freight task (Table 2).

To provide the best net balance between safety, infrastructure protection and productivity, it is important to ensure access decisions are informed and in line with the actual performance of heavy vehicles on roads. It is also important that road managers are equipped with the right route assessment products to assist them in making timely decisions.

Table 2: Pavement wear comparison

	Semitrailer	PBS A-double	Difference
General Mass Limit mass (t)	43	79.5	+85 %
Trips per 1,000t	42	21	-50 %
Equivalent Standard Axles per 1,000t	304	225	-26 %

Utilisation of existing route assessment products

Route assessment guidelines have been developed by the NTC, jurisdictions and Austroads. In August 2018, the NHVR, the Australian Road Research Board (ARRB) and local government associations partnered to deliver the Restricted Access Vehicle Route Assessment Tool (RAVRAT) to local governments for free. RAVRAT is an online tool designed to provide a consistent and defensible route assessment method. RAVRAT was initially launched in 2012 as a fee-for-service platform.

Consultation with local government identified that these current guidelines and tools are infrequently used because of lack of awareness they exist—they are not sure which one to use, they are too complex or time-consuming, and they are not the route assessment products they want.

"Austroads has developed ... a set of nationally consistent guides ... However, guidelines such as these can only be of use if local governments have sufficient resources with the expertise and capacity to assess and map networks."[1]

Delivering new route assessment products

Delivering robust fit-for-purpose route assessment products that meet the needs and expectations of road managers can contribute to creating a consistent and informed national assessment standard, minimise personal decision-making and enable quicker decisions.

Three frequently requested products include a heavy vehicle bridge assessment system, calculators comparing pavement impacts for different heavy vehicle types and mass, and tools to conduct and compare swept paths for different vehicles.

To equip local government with route assessment products, the NHVR proposes to:

- survey local governments to better understand their utilisation of current route assessment tools and guidelines and their preferences for new tools and guidelines
- partner with Austroads and jurisdictions to commence the development of nationally consistent access decision-making frameworks
- publish the revised, *'Approved Guidelines for Granting Access'*
- investigate the enhancement of RAVRAT or develop new route assessment tools, in particular to assist structural, pavement and swept path assessments.

1 NTC, 2017, *Assessing the effectiveness of the PBS Scheme*

Goal 3: Enable governments and industry to identify and advocate for infrastructure investment

Overview

Productivity is dependent on the performance of all roads. There is an infrastructure funding gap, and local governments, in particular, require financial support to upgrade and build new infrastructure on the first and last mile to support the growing road freight task.

The Commonwealth Government has announced an investment of $100 billion on transport infrastructure as part of its 10-year rolling infrastructure plan[1], and the state and territory government infrastructure spend is over $150 billion from 2018–19 to 2021–22[2].

Some of this is directed to local government (e.g. through the Fixing Country Roads program funded by the New South Wales Government and the Northern Australia Beef Roads Program co-funded by the Commonwealth, Northern Territory, Queensland and Western Australian Governments). However, ALGA suggests local government is still not getting an equitable share.[3]

Knowing what is moving where, when and how often, and knowing where industry has been refused access, will assist in identifying and prioritising investment opportunities on key freight roads and bridges.

NHVR data and programs to support funding advocacy

Having comprehensive data on historic access decisions[4], the standard of national assets[5] and the national road freight task[6] will enable government and industry to identify and better advocate for targeted investment in key freight roads and bridges.

Data from the NHVR can also assist to inform asset management and long-term financial planning. For example, it may be better to redirect funds to invest regularly in maintaining one key corridor and maintain other corridors less regularly.

This data would also be useful for accurately determining required levels of service. Understanding how roads and bridges are actually being used by different heavy vehicles avoids the risks and costs of under-embellishing key routes and over-embellishing routes not used by heavy vehicles.

877,000KM
of roads (150,000km urban and 727,000km non-urban)[7]

662,000KM
of local government roads (75% of total road network)[8]

65,000 bridges[9]

To enable governments and industry to identify and advocate for infrastructure investment, the NHVR proposes to:

- evaluate and develop digital tools that monitor and report on key freight routes being travelled
- evaluate and develop digital tools that monitor and report on significant repetitive access permit applications conditioned or refused by road managers
- provide a hub to access and provide inputs to data, reports and maps on key freight routes being travelled and key bottlenecks on industry desire lines.

1 Department of Infrastructure, Regional Development and Cities, 2019, *Building Our Future: Delivering the Right Infrastructure for a Growing Nation,* Australian Government
2 Infrastructure Partnerships Australia, 2018, *Australian Infrastructure Budget Monitor 2018–2019*
3 Australian Local Government Association, 2019, *2019 Local Government Roads and Transport Agenda*
4 Refer Objective 1, Goal 1
5 Refer Objective 1, Goal 3
6 Refer Objective 1 Goal 4
7 Bureau of Infrastructure, Transport and Regional Economics, 2018, *Australian Infrastructure Statistics Yearbook 2018,* Australian Government
8 Australian Local Government Association, 2019, *2019 Local Government Roads and Transport Agenda*
9 Austroads, 2019, *Scoping Study: Heavy Vehicle Bridge Assessment System – DRAFT INTERNAL REPORT*

Objective 3: Promote safer and more-productive vehicles that are better for the environment and communities

Goal 1: Encourage the uptake of modern and safer heavy vehicles

Overview

Most heavy vehicles in Australia are imported from Asia, Europe or North America. Australian heavy vehicle standards are more than 90 per cent harmonised with international vehicle standards, such as United Nations (UN) regulations (depending on the vehicle category).

Given significant technological development, further harmonising Australia's heavy vehicle standards with international standards and progressive regulation that encourages fleet modernisation will offer major benefits, such as improved driver and community safety (Figure 4) and reduced carbon emissions (Table 3).

Finalisation of Austroads research, Commonwealth Government regulatory impact statements and recommendations from the Strategic Vehicle Safety and Environment Group will assist in determining access options that the NHVR can deliver for innovative but larger and heavier vehicles.

Technology to support innovative and modern vehicles

Australia is among the few countries in the developed world to have a regulated maximum vehicle width of 2,500mm. Major international markets are generally wider, such as the United States at 2,600mm and the European Union at 2,550mm.

To comply with Australia's width limits, imported vehicles often undergo modifications, such as removal of non-compulsory safety components. Industry may also not purchase optional vehicle inclusions to ensure compliance with Australia's width limits.

Current Australian practice is to provide standard traffic lanes widths of 3.5m, or 3.0m for low-speed roads with low truck volumes.[1] Safety technology, such as lane departure warning systems and cameras, may provide the confidence that vehicles wider than 2,500mm can remain in lane and not compromise road safety.

To mitigate the potential for rollovers, 4.6m high freight vehicles have their mass limited to 90 per cent of what could normally be carried legally on the same road if the vehicle was 4.3m high.

Subject to rigorous research, safety technology, such as electronic and rollover stability control systems, may enable 4.6m high vehicles to operate at 100 per cent payload without having a higher risk of vehicle rollover.

The UN Euro VI emission standard is better for the environment than Australia's currently mandated Euro V standard. However, Euro VI emission standard compliant vehicles are heavier than Euro V vehicles.

As a payload critical industry, there would be no commercial incentive to justify an investment to upgrade without an increase in mass limits to maintain existing levels of productivity. There is precedent for this to occur (e.g. the 500kg concession provided to upgrade to Euro IV).

Given significant advancements in safety and environmental technology, a greater emphasis should be placed on progressive regulation and sound scientific research and evidence to determine where these technologies can deliver the necessary assurances and performance to improve productivity and encourage the update of modern and safer vehicles.

To encourage the uptake of modern and safer heavy vehicles, the NHVR proposes to:

- support the Commonwealth Government in further harmonising Australia's vehicle standards with international standards (e.g. through amendments to the Australian Design Rules)
- develop policies that provide regulatory options to grant access to roads for larger and/or heavier vehicles fitted with certain safety and environmental technologies.

1 Austroads, 2016, *Guide to Road Design Part 3 – Geometric Design*

Estimated average age of:[1]

BUSES

11.6 YEARS

(29.4% manufactured before 2003)

HEAVY RIGID TRUCKS

15.6 YEARS

(41.4% manufactured before 2003)

ARTICULATED TRUCKS

11.8 YEARS

(27.8% manufactured before 2003)

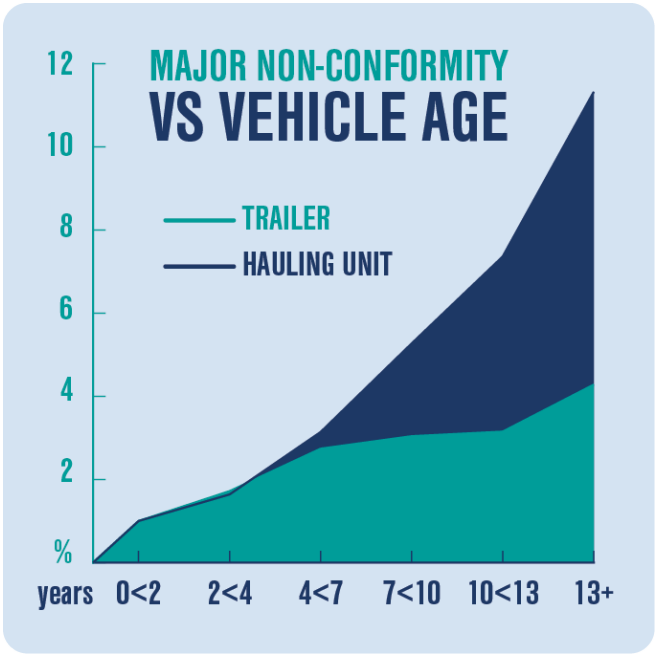


Figure 4: Major non-conformity vs vehicle age[2]

Table 3: Exhaust emissions based on year of manufacture[3]

		PM		NOx	
Year	Emission Standard	Test Limit	Multiple	Test Limit	Multiple
Pre-1996	None (Euro 0)	1.2	x120	16.0	x40
Pre-2003	ADR70/00 (Euro I)	0.4	x36	7.6	x28
Pre-2008	ADR80/00 (Euro III)	0.1	x10	5.0	x13
Pre-2011	ADR80/00 (Euro IV)	0.02	x2	3.5	x9
2011	ADR80/00 (Euro V)	0.02	x2	2.0	x5
Not yet known	ADR80/00 (Euro VI)	0.01	x1	0.4	x1

Notes:

- Exhaust emission levels are measured as g/kWh (gram per kilowatt hour).
- Data for pre-1996 is an average.
- Data for other years assumes engines are built to applicable Euro standard.

1 Australian Bureau of Statistics, *2018, 9309.0 - Motor Vehicle Census*, Australia, 31 January 2019
2 National Heavy Vehicle Regulator, 2017, *National Roadworthiness Baseline Survey*
3 Truck Industry Council, 2019, *Truck Industry Council Budget Submission 2019/20*

Goal 2: Deliver a modern approach to the PBS scheme

Overview

The NHVR has worked closely with industry and jurisdictions to improve regulatory efficiency. For example, the NHVR introduced the Pre-advised Design Approval process in March 2017.[1]

Since implementation, processing times for pre-advised designs have on average reduced from four weeks to three business days. To date, most major designs have been pre-advised by the PBS Review Panel, and 85 per cent of all design approvals qualify for the simplified Pre-advised Design Approval process.

Having administered the PBS scheme for over five years, the NHVR has gained important learnings and identified other key areas that, if implemented, would further enhance and modernise the PBS scheme.

Updating the PBS standards

The PBS standards were originally developed in the late 1990s by the NTC, and the modelling and testing procedures were approved by the Australian Transport Council in 2007. The NTC has suggested that the standards should be reviewed to reform and modernise the PBS scheme.[2]

The standards review has already commenced, starting with the review of tyre management practice and tyre characteristics—as they relate to different performance measures—and the review of the Frontal Swing, Directional Stability Under Braking And Pavement Horizontal Loading standards.

Completing the review and updating the standards (where appropriate) will ensure the PBS scheme reflects the highest standards of safety and provides further opportunities to improve productivity.

Incrementally enabling fleet interchangeability

The PBS scheme is currently structured to approve whole combinations (e.g. B-double, prime mover and semitrailer), rather than vehicle units. These approvals are very specific and do not allow for simple fleet interchangeability, even when it poses no additional safety risk (e.g. swapping compatible prime movers when a prime mover is unavailable).

Enabling fleet interchangeability would provide increased flexibility and reduce costs and inconvenience to industry. This approach would need to be carefully and incrementally introduced to preserve confidence in the safety performance of PBS vehicles currently provided by whole combination approvals.

Transition of common and mature designs to the HVNL

The PBS scheme was designed to be a testing ground for new and innovative heavy vehicle concepts, some of which could become common and transition out of the PBS scheme and into regulation. This would assist to increase the uptake of PBS vehicles by industry through reducing the cost and time to get vehicles proven to be of minimal risk onto roads.

A major challenge for the NTC, the NHVR and the PBS Review Panel is identifying suitable PBS vehicle candidates and appropriately transitioning the inherently bespoke nature of PBS vehicles into prescriptive regulation.

PBS blueprints

A PBS blueprint is an approved PBS design that allows bypassing early stages in the PBS approvals process and progression straight through to certification (i.e. checking that a vehicle is built in accordance with the approved design). Most PBS blueprints are developed by manufacturers. Some open access PBS blueprints exist but these are not widely used by industry.

Pre-advising more PBS blueprints and other PBS designs, as recommended by the NTC,[3] will make it cheaper, quicker and easier to get PBS vehicles onto roads, thereby making the PBS scheme more attractive to new market entrants.

PBS Manufacturer's Certification Scheme (PBSMCS)

Around 80 manufacturers are involved in supplying PBS vehicles and equipment in Australia. With a compound annual growth rate of 28 per cent since 2007, enabling manufacturers to self-certify[4] the PBS vehicles they design and build will provide opportunities to accelerate this growth.

By allowing manufacturers to conduct most of the work in-house, it will be quicker, easier and cheaper to deploy a PBS vehicle onto roads. Based on 2018–19 average certification costs and number of certifications, the NHVR estimates that up to $5 million could be saved annually through manufacturer self-certification.

Manufacturers would need to adhere to some form of audit process, similar to the requirements of the Commonwealth Government's Single Unit Type Inspection (SUTI) or the National Heavy Vehicle Accreditation Scheme.

To deliver a modern approach to the PBS scheme, the NHVR proposes to:

- finalise the review of the PBS vehicle performance and infrastructure standards
- work with the PBS Review Panel to enable fleet interchangeability for PBS combinations
- in partnership with the NTC and the PBS Review Panel, commence identifying and transitioning suitable common and mature PBS vehicles into regulation
- continue to partner with industry and the PBS Review Panel to pre-advise more PBS designs and PBS blueprints.
- investigate the development of a PBS Manufacturers Certification Scheme.

1 A pre-advised PBS design is a well-known design that has been frequently assessed and approved and no longer requires further assessment by the PBS Review Panel.
2 NTC, 2018, *Reforming the Performance Based Standards Scheme*
3 Ibid.
4 Currently under the PBS scheme Vehicle Certification Rules, manufacturers can only issue manufacturer's certificates for vehicles built in accordance with a previous certification by a PBS Approved Certifier (i.e. based on previously approved concepts). The current process does not allow for manufacturer self-certification of new concepts.

Goal 3: Promote awareness of planning and design for modern and safer heavy vehicles

Overview

Governments are responsible for managing growth and change through planning that balances the social, environmental and economic needs and aspirations of their communities. Heavy vehicle access and productivity are dependent on zoning and development being appropriately located and supported by the right infrastructure.

While planning is not an NHVR responsibility, industry has requested that the NHVR play a more active role in improving planners' understanding of heavy vehicles. The NHVR's role would be limited to working with the Commonwealth Government and jurisdictions to promote awareness of the road freight task and the needs of heavy vehicles.

This initiative aligns with Recommendation 5.3 of the *Commonwealth Government's Inquiry into National Freight and Supply Chain Priorities Report*:

"Raise awareness of the importance of freight and the need for appropriate planning, development approval conditions, protection and regulatory regimes in the government sector, particularly land use and transport planners, environmental regulators and developers, through formal and informal education."

Land use supporting heavy vehicles

Government land use planning and policies should be consistent with the freight task that supports their economies. Industrial operations should be safeguarded, particularly those operating overnight or 24 hours a day.

The NHVR is aware of cases where truck bans and curfews have been implemented in industrial areas because of adjacent residential development and communities misunderstanding the freight task and the impacts of heavy vehicles.

These decisions impact productivity, can increase the cost of goods and services for the community, and may affect logistics operations for domestic and international supply chains. An increased risk to safety, infrastructure and amenity may eventuate when the opposite effect was desired.

Resilient and reliable infrastructure

During the consultation process, industry and government provided examples where heavy vehicle access was refused, even within industrial areas, due to substandard site and road design. Common design deficiencies include: inadequate driveway width, insufficient lot size, rear of vehicles protruding into oncoming traffic because of short turn-pocket space, and small intersections requiring vehicles to veer onto the wrong side of the road to make turns.

Many industrial developments and roads were constructed for historically smaller and lighter vehicles. Continued use of outdated design standards will mean land and infrastructure will increasingly fail to accommodate innovation in the heavy vehicle fleet.

Planning and design standards must be progressively and suitably updated to provide access to modern vehicles that are safer, more productive and better for the environment.

To promote awareness of planning and design for modern and safer vehicles, the NHVR proposes to:

- partner with Austroads, the Commonwealth Government, and state and territory road authorities to develop best practice approaches and tools that improve community acceptance and understanding of road freight and heavy vehicles
- support the Commonwealth Government and jurisdictional road authorities to engage and educate government planning departments on the productivity, safety and environmental benefits of modern heavy vehicles
- support the Commonwealth Government and jurisdictional road authorities to encourage government planning department to adopt policies and update planning schemes and design standards to support modern heavy vehicles.

Appendix 1: Online webinar registrations

Road managers and local government associations

Adelaide Plains Council
Bass Coast Shire Council
Barunga West Council
Baw Baw Shire Council
Bega Valley Shire Council
Boral Australia
Brisbane City Council
Buloke Shire Council
Brimbank City Council
Cardinia Shire Council
Cassowary Coast Regional Council
City of Ballarat
City of Burnside
City of Charles Sturt
City of Greater Bendigo
City of Greater Dandenong
City of Greater Geelong
City of Hobart
City of Latrobe
City of Melton
City of Mitcham
City of Port Adelaide Enfield
City of Port Phillip
City of West Torrens
Clarence City Council
Clarence Valley Council
Colac Otway Shire Council
Coolamon Shire Council
Department of State Growth, Tasmania
Department of Transport and Main Roads, Queensland
Derwent Valley Council
Devonport City Council
District Council of Loxton Waikerie
East Gippsland Shire Council
Flinders Ports of South Australia
Gibsons Groundspread
Glen Eira Shire Council
Glenelg Shire Council
Greater Hume Council
Griffith City Council
Hornsby Shire Council
Horsham Rural City Council
Inverell Shire Council
Ipswich City Council
Kingsborough Council
Launceston City Council
Leeton Shire Council
Light Regional Council
Liverpool Plains Shire Council
Local Government Association of Tasmania
Logan City Council
Maitland City Council
Maribyrnong City Council
Maroondah City Council
Mildura Rural City Council
Moreton Bay Regional Council
Mornington Peninsula Shire Council
Municipal Association of Victoria
Nillumbik Shire Council
Northern Grampians Shire Council
Office of Environment and Heritage, New South Wales
Port of Brisbane Pty Ltd
Pyrenees Shire Council
Redland Shire Council
Road and Maritime Services, New South Wales
Rockhampton Regional Council
Rural City of Wangaratta
Shire of Wellington
South Gippsland Shire Council
Surf Coast Shire Council
Swan Hill Rural City Council
Tablelands Regional Council
Tasmania Parks and Wildlife Service
Tatiara District Council
Tenterfield Shire Council
Toowoomba Regional Council
Towong Shire
Town of Gawler
Transport for New South Wales
Transurban
VicRoads
Wagga Wagga City Council
Wattle Range Council
West Wimmera Shire Council
Whyalla City Council
Wollondilly Shire Council
Yarra Ranges Council

Industry and industry associations

Active Supply Chains Asia Pacific
Advance Sweepers
AHG Refrigerated Logistics
Bunzl Australasia
Craig Arthur Pty Ltd
Endeavour Energy
Ergon Energy
Essential Energy
Fennell Forestry
Fleet Plant Hire Pty Ltd
Grain Growers Ltd
Hanson Australia
JMA Engineering
Kennedy Express
Killen Trucking Company
LINX Cargo Care Group
Longmuir Transport Services
McArdle Freight
PepsiCo Australia & New Zealand
Phoenix Transport
Qube Holdings Ltd
Queensland Trucking Association
Rapid Haulage
Rocky's Own Transport
SPC
Stef's Transport Pty Ltd
SunRice
Toll Group
Transport Auditing
Vellex
Western Suburbs Concrete
Other individuals (7)
Other private entities (14)

Appendix 2: Pre-submission consultation register

Commonwealth, state and territory government

Department of Infrastructure, Transport, Cities and Regional Development, Commonwealth
Department of Planning, Transport and Infrastructure, South Australia
Department of State Growth, Tasmania
Department of Transport, Victoria
Department of Transport and Main Roads, Queensland
Main Roads Western Australia
Regional Development Victoria
Road and Maritime Services, New South Wales
Transport Canberra and City Services
Transport for New South Wales
VicRoads
Victoria Cross Border Commissioner

Industry and industry associations

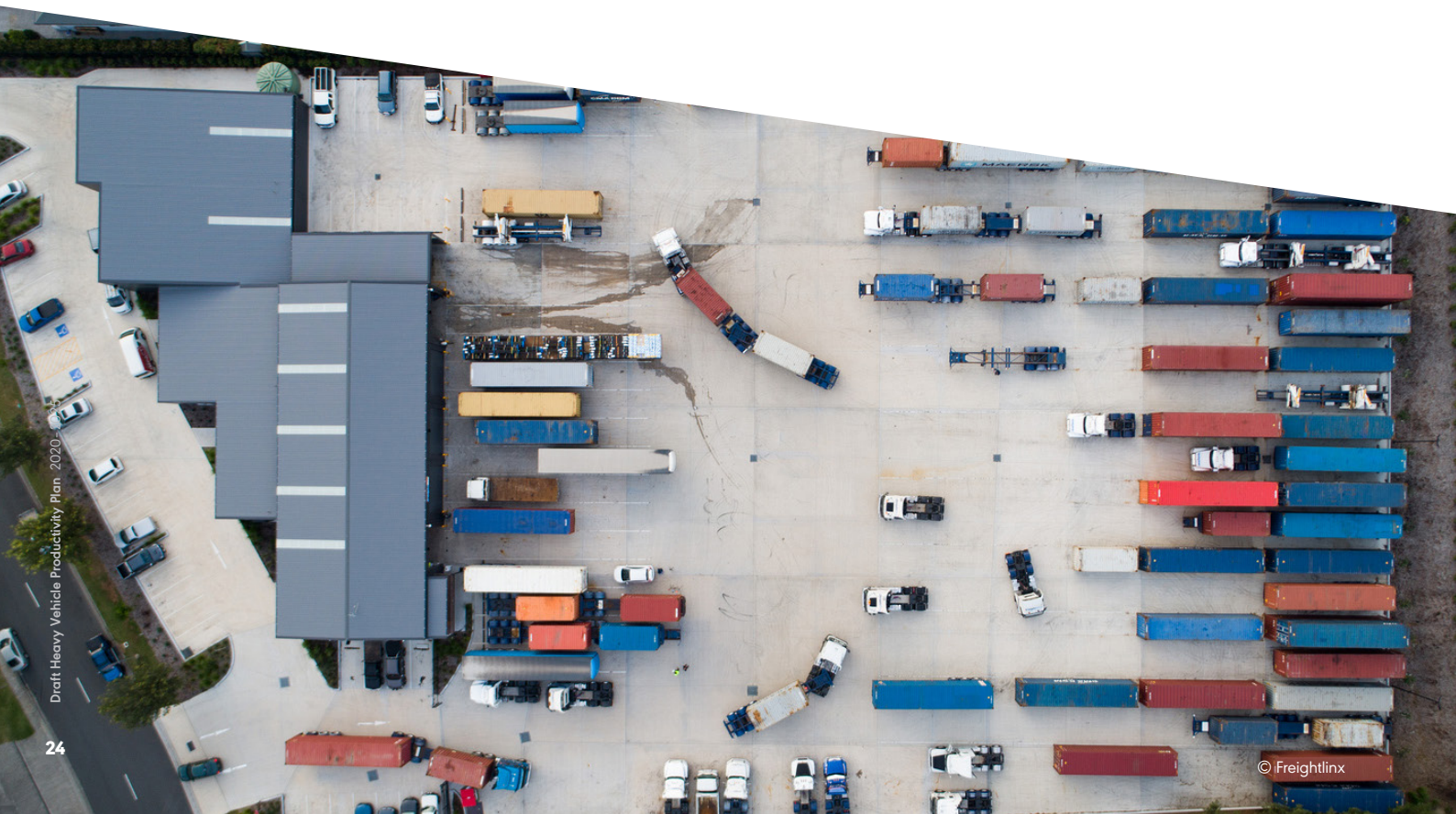
AgForce
Australian Livestock and Rural Transporters Association
Australian Logistics Council
Australian Trucking Association
Centurion
DP World Australia
Grain Growers Ltd
Queensland Transport and Logistics Council
Queensland Trucking Association
Qube Holdings Ltd
Road Freight NSW
Ron Finemore Transport
Toll Group
Victorian Transport Association

Other associations

Institute of Public Works Engineering Australasia
Roads Australia
Transport Certification Australia

Non-jurisdictional road managers and local government associations

Adelaide Plains Council
Albury City Council
Australian Local Government Association
Brimbank City Council
Brisbane City Council
City of Greater Dandenong
City of Marion
City of Port Adelaide Enfield
District Council of Cleve
District Council of Streaky Bay
Forbes Shire Council
Inner West Council
Kyogle Council
Light Regional Council
Local Government Association of Queensland
Local Government Association of South Australia
Local Government Association of Tasmania
Local Government New South Wales
Maribyrnong City Council
Moree Plains Shire Council
Municipal Association of Victoria
Naracoorte Lucindale Council
Port Augusta City Council
Port of Brisbane Pty Ltd
Shoalhaven City Council
Walcha Council



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Appendix 3: Understanding heavy vehicle access under the NHVR

Understanding heavy vehicle access

Heavy vehicles provide a critical link in the end-to-end supply chain process for the movement of goods and services across Australia and internationally. Heavy vehicles require access to the road network and they can either be a general access vehicle or a restricted access vehicle.

Simply put, general access vehicles comply with mass and dimension requirements of the HVNL and have access to the full road network unless signposted otherwise.

Restricted access vehicles do not comply with mass and dimension requirements of the HVNL and must only operate on roads under a mass or dimension authority (e.g. a notice or permit).

Mass and dimension authorities require the consent of relevant road managers (i.e. the road owner), and typically some level of assessment is conducted prior to an issue of consent, to ensure the movement does not come at risk to public safety, public amenity or infrastructure.

Types of restricted access vehicles

The HVNL currently provides for three classes of restricted access vehicles. The NHVR has developed a chart that illustrates the most common heavy vehicle types for each class as defined by the HVNL.

The chart is not a comprehensive representation of the Australian heavy vehicle fleet and is provided for guidance only. The chart is located on the NHVR website.

Road managers

Road managers include road authorities, local governments and other road owners (e.g. ports, airports and toll road operators).

Road managers are responsible for deciding whether or not to provide consent to restricted access vehicles seeking to operate on roads under their responsibility.

The NHVR is not a road manager. Under the HVNL, it is unable to make an access decision without road manager consent and cannot overrule the decision of a road manager.

Route assessment

Road managers may conduct route assessments to determine whether or not to issue consent.

The range and complexity of restricted access vehicles, their mass and dimension, the varying condition and knowledge of infrastructure, differing systems and processes, and the depth of experience of road managers all combine to present a challenge to undertaking route assessments and making access decisions.

Third-party entities

Third-party entities are sometimes required by laws outside of the HVNL to provide approval or be consulted if a heavy vehicle exceeds certain mass or dimension limits.

Examples of third parties include police, toll road operators and rail infrastructure managers.

Third-party approvals are outside the scope of the Plan and fall under the remit of the HVNL Review or review of other laws outside of the HVNL.

Access by permit

Permits are a legal instrument issued to specific operators that provide access for certain restricted access vehicles to roads approved by road managers. Permits may contain conditions of access that must be adhered to by operators.

The HVNL outlines the legal requirements for the application, assessment and issuing of permits and the types of conditions that may be applied.

Permits are the preferred method of providing access for high-risk movements. Permits are also the preferred method of providing access for low-volume movements, as they are also more flexible and easier to change than notices and do not need to undergo the notice development process under the HVNL.

Access by notice

Notices are an instrument that provides access to gazetted networks or areas approved by road managers. Notices apply to any operator and, similar to permits, provide access only to certain types of restricted access vehicles and may contain conditions of access that must be adhered to by operators.

The HVNL outlines the legal requirements for the development of notices and the consultation process with road managers. Notices require only a single initial consent by road managers that lasts for the notice duration (typically five years). Road managers may change their consent status or conditions of access for notices by writing to the NHVR.

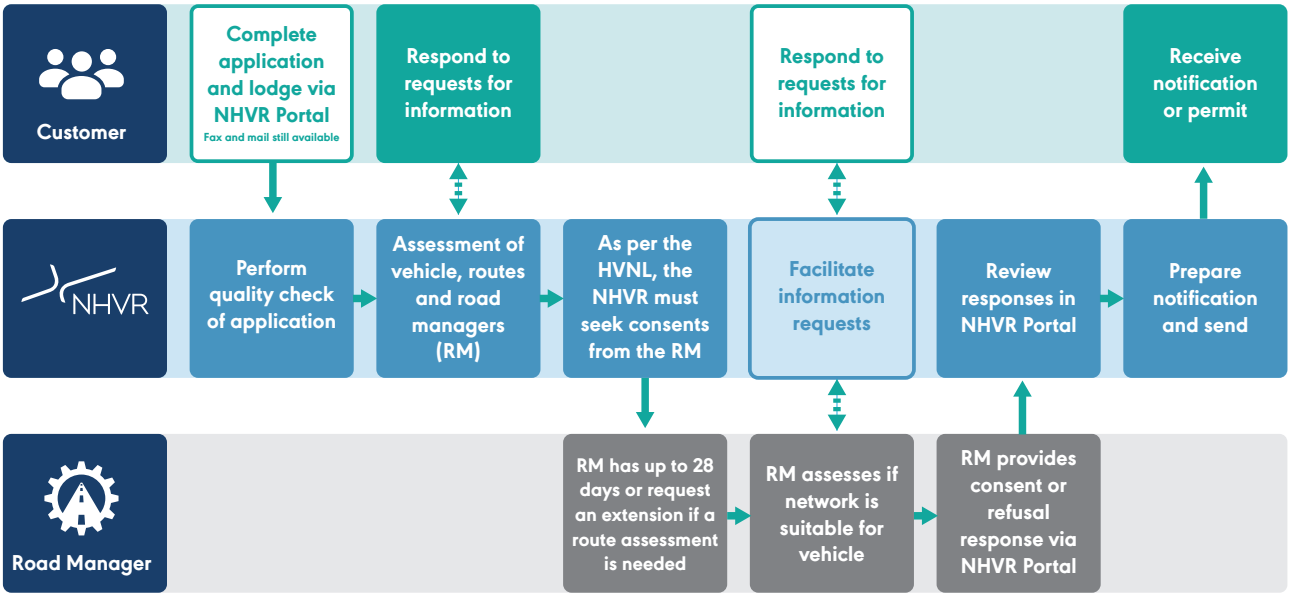


Figure 5: Flowchart of the NHVR permit process. *Note: New South Wales and Queensland are transitioning to this model.*

Notices are the preferred method for providing access to low-risk and high-volume movements. They provide greater access and certainty but are less flexible and more difficult to amend than permits.

Access under pre-approvals

An intermediate solution between notices and permits is permits issued under pre-approvals. Pre-approvals are an agreement made between road managers and the NHVR that are supported by an initial route assessment.

Operators are still required to apply for a permit but pre-approvals expedite the permit-issuing process by allowing the NHVR to avoid engaging road managers to conduct subsequent route assessments for pre-agreed routes. The NHVR still supplies a copy of issued permits to road managers for their records and to keep them informed.

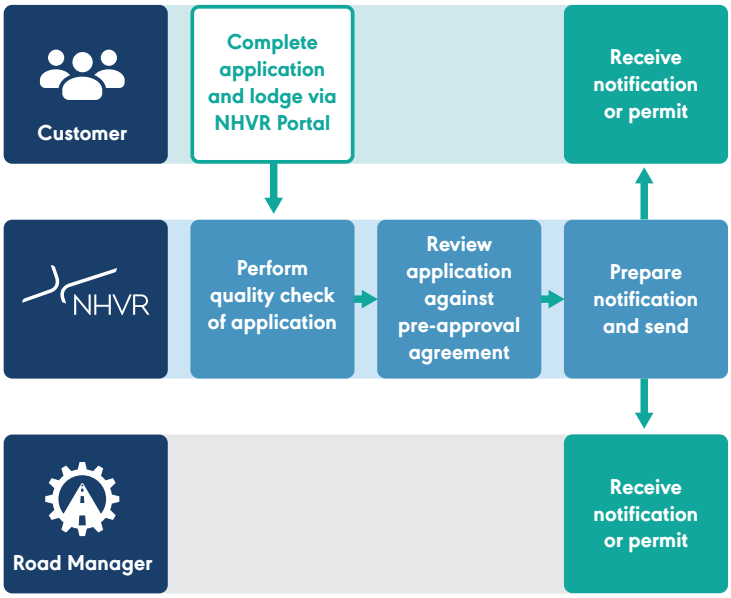


Figure 6: Pre-approved access permit flowchart

Appendix 4: Heavy vehicle data acquisition and enrichment under the NHVR

Prior to the existence of the NHVR, there was limited capturing and sharing of heavy vehicle related information across borders.

The NHVR Portal and the SCRP comprise the main data collection and sharing channels between the NHVR and its government and industry stakeholders.

The NHVR Portal and the SCRP form part of an advanced technology ecosystem within the NHVR. Their information warehousing is agnostic and does not limit any type of interfacing or integration, ensuring they remain current and interoperable with future internal and external data sources and digital products.

Continuing to enhance the NHVR's digital and data capabilities—including expanding the functionality of the NHVR Portal and SCRP to give users broader and open access to unique information collected by the NHVR, and developing complex tooling with analytics capabilities—is a key element of the Plan, to deliver improvements to access and productivity.

The NHVR will continue to invest in enhancing the NHVR Portal and the SCRP, developing other complementary front- and back-end systems and data acquisition and enrichment programs as required to advance its regulatory capability as a modern regulator.

The NHVR Portal

The NHVR Portal was first launched to industry in May 2016, with road manager support provided in October 2017.

The NHVR Portal moved applications and permits from a paper-based environment to an integrated online experience, and allowed the NHVR, industry and road managers to interact on the same platform for the first time.

Over 99 per cent of applications and permits are delivered through the NHVR Portal, making it a valuable database of information on approved and refused routes for different types of restricted access vehicles.

Data from over 150,000 applications by industry has been captured since implementation of the Customer Module in May 2016.

The Safety and Compliance Regulatory Platform

The SCRP provisions core regulatory and safety functions within the NHVR, and enables the NHVR to securely receive and store safety and compliance related data with industry and government stakeholders.

The SCRP currently focuses on nationwide information about Australia's heavy vehicle fleet (e.g. vehicle registration and configuration), sightings and movements (e.g. collected by real-time monitoring cameras), and drivers and operators (e.g. driver history and participation in the National Heavy Vehicle Accreditation Scheme).

The SCRP provides the first unique national picture of the heavy vehicle fleet, compliance and assurance information, and will deliver national visibility of heavy vehicle movements across Australia. The NHVR will continue to invest in the SCRP to grow its intelligence and expand the program to include data on road accidents, traffic volumes and congestion.

Appendix 5: The Performance Based Standards scheme

First introduced in 2007, the PBS scheme is a world-leading program providing industry with the opportunity to innovate vehicle design to improve productivity by 15–30 per cent. The PBS scheme is voluntary and complements the prescriptive regulatory system for heavy vehicles.

PBS vehicles are designed and built to perform their tasks as safely and sustainably as possible. They are assessed against 16 vehicle performance and four infrastructure protection standards to ensure they are safe (Figure 7). Every vehicle is assessed against these standards by an authorised PBS Assessor via a computer simulation, or physical testing.

Depending on the assessment results, a vehicle can be assigned one of four PBS levels (Table 4).

Table 4: Approved PBS levels and their equivalently performing prescriptive vehicles

Approved PBS Level	Equivalent prescriptive vehicle
PBS Level 1	Similar to general access vehicle
PBS Level 2	Similar to 26m B-double
PBS Level 3	Similar to Type 1 Road train
PBS Level 4	Similar to Type 2 Road train

Originally administered by the NTC and managed by the NHVR since 2013, it provided an economic value of $185 million to $326 million during 2014–2019.[1] The future economic value is projected to be $800 million to $1.5 billion from 2014–2030.[2]

There have been more than 18,000 separate PBS approvals (trucks, trailers and buses), which together make up more than 9,000 PBS combinations. In 2017, approximately one in six new heavy vehicles was PBS approved. In 2018, this increased to approximately one in five.

Growth in the use of PBS vehicles on roads has resulted in significant productivity, safety and sustainability benefits for industry and the community. From 2007 to November 2019, compared to the vehicles that would have been otherwise required to complete the same task, the PBS scheme has benefited Australia by:

- reducing CO_2 emissions by over 2.2 billion kiograms
- reducing fuel consumption by over 800 million litres
- removing 2,700 trucks from the road
- reducing truck distance travelled by over 1.6 billion kilometres
- reducing major crashes per kilometre by 46%.[3]

1 Chow, M., Kleyer, H. and McLeod, B., 2019, *Economic benefits of heavy vehicle regulatory reform, HoustonKemp Economists*
2 Ibid
3 Austroads, 2014, *Quantifying the benefits of Australian High Productivity Vehicles*

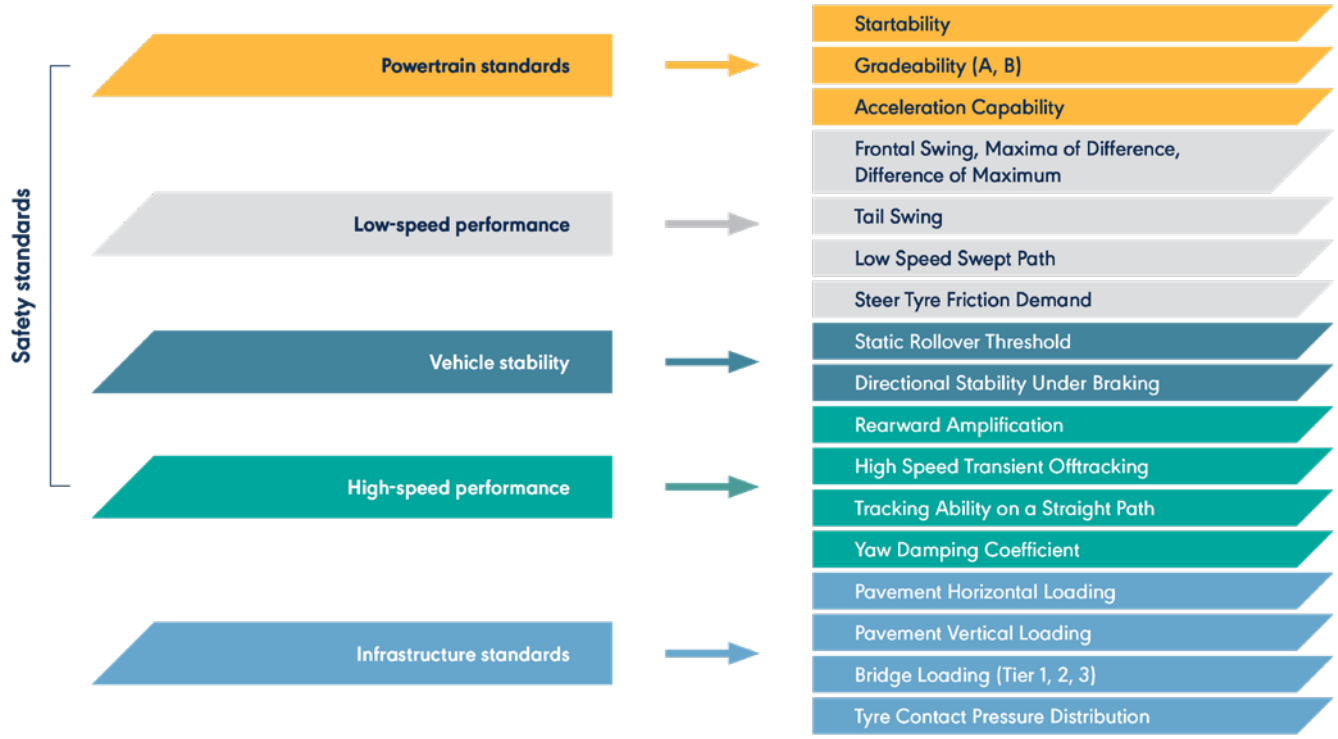
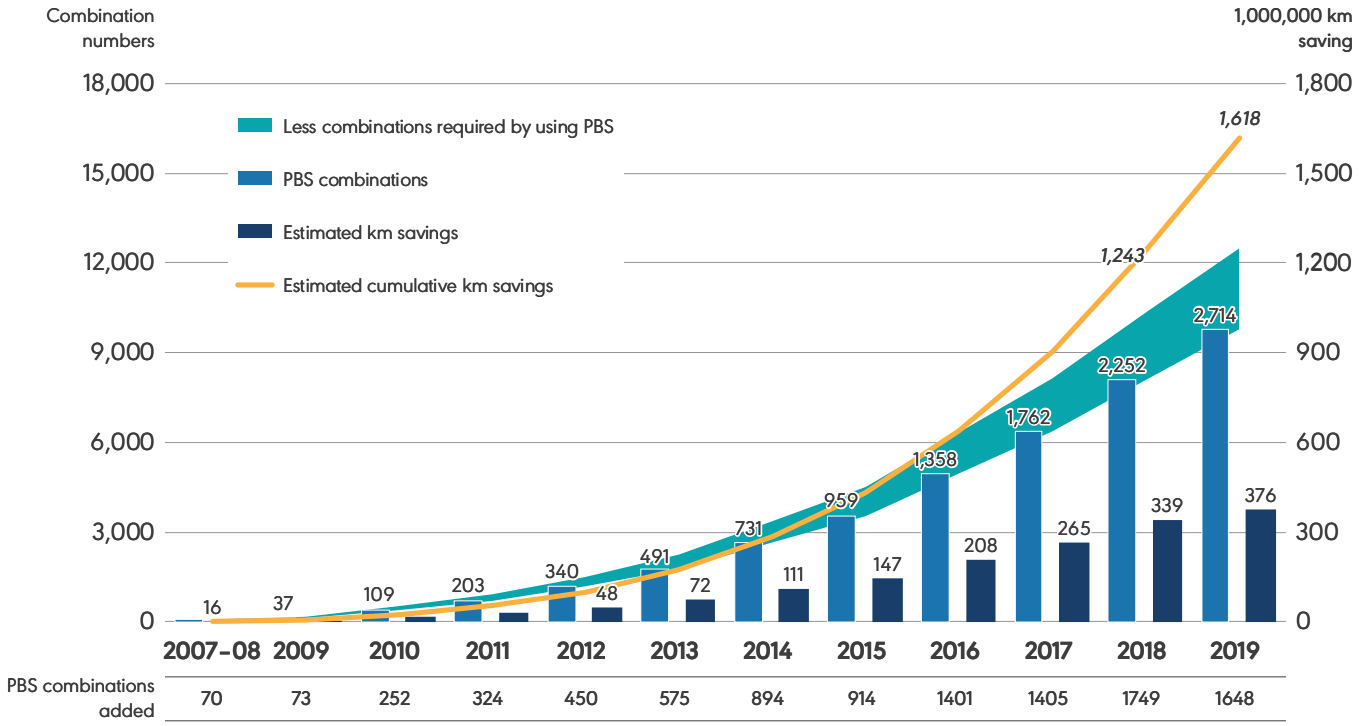
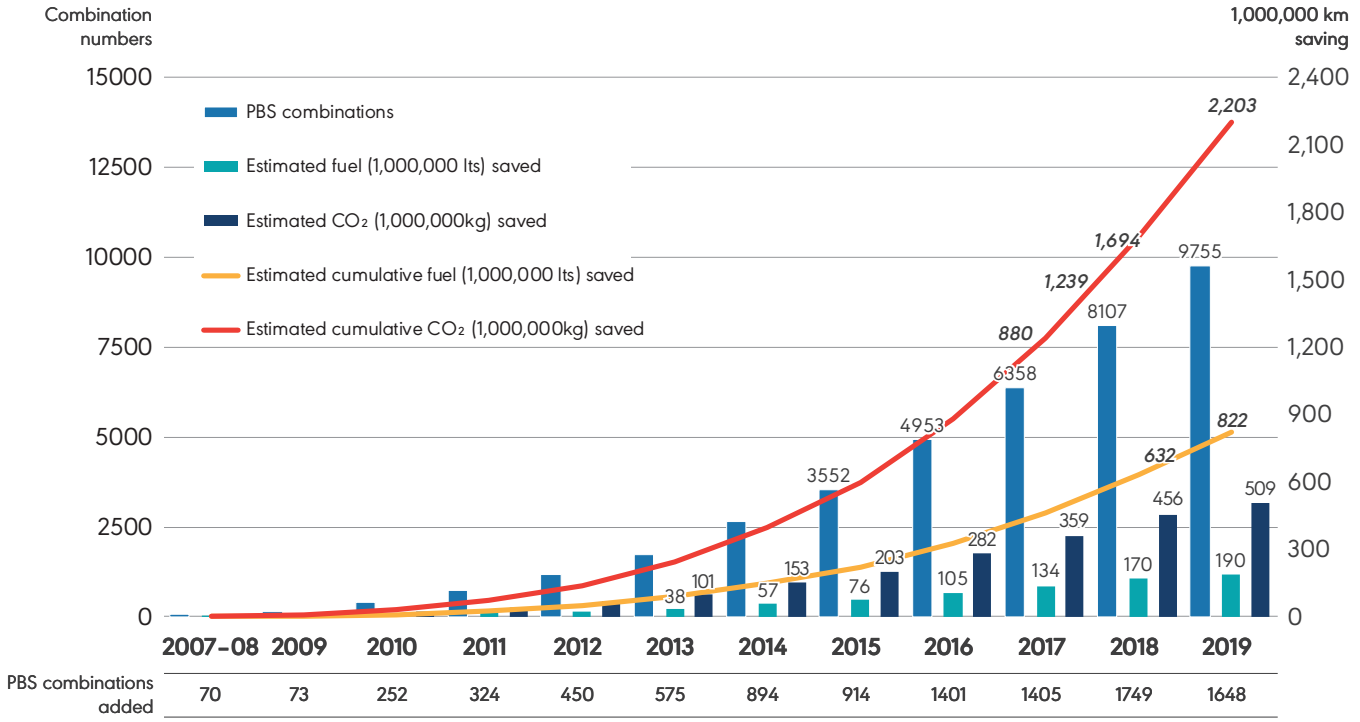


Figure 7: PBS vehicle performance and infrastructure protection standards



The factor and methodology from the Austroads Research Report AP-R465-14 (Quantifying the Benefits of High Productivity Vehicles) has been used with the number for approved PBS combination to quantify the benefits achieved from PBS.

Figure 8: Productivity and congestion benefits of PBS vehicles (2007 to November 2019)



1. The factor and methodology from the Austroads Research Report AP-R465-14 (Quantifying the Benefits of High Productivity Vehicles) has been used with the number for approved PBS combination to quantify the benefits achieved from PBS.
2. Rated fuel burn used from ATA - TAPs - Truck Impact Chart September 2016.
3. Diesel to CO_2 conversion rate of 2.68kg per litre used.

Figure 9: Environmental benefits of PBS vehicles (2007 to November 2019)


LONG VEHICLE

For further information about the NHVR's activities, functions and services, please visit our website or contact us via:

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