Austroads Submission on the Impacts of Heavy Vehicle Reform

Contents

1. Introduction

The purpose of this submission is to provide Austroads' understanding and experience of issues covered by the Productivity Commission's inquiry into the impacts of heavy vehicle reform.

1.1 Background

The Productivity Commission has been asked by the Treasurer to provide advice on the 'impacts of a heavy vehicle productivity reform package' to 'support continued pro-competitive reform under National Competition Policy (NCP).'

The Intergovernmental Agreement on National Competition Policy, signed in 2024, 'supports the implementation and ongoing development of policy, law and reforms to sustainably improve living standards and opportunities for Australians through … reforms to lift Australia's overall economic performance and achieve other benefits including improvements in consumer access and welfare, service quality, and contributions towards Australia's emission reductions.'

As part of the Agreement, all governments agreed a number of principles including:

- Principle 5 – Governments should promote a single national market, where parties will not create or entrench barriers to buying and selling goods and services, operating businesses, and working across state and territory and international borders, where appropriate
- Principle 6 – Government pricing practices should be efficient and transparent, where parties will promote efficient and transparent pricing practices for goods and services provided by government monopolies or near monopolies, including regulatory services, and goods and services provided by government business enterprises
- Principle 7 – Access to significant infrastructure facilities should be on reasonable terms and prices, where parties will maintain, where relevant, frameworks to facilitate access to services provided by significant infrastructure (including non-physical infrastructure) facilities with natural monopoly characteristics, on reasonable terms and prices.

The Treasurer has advised that treasurers of Australia's governments are pursuing NCP related reforms including road user charging.

1.2 Scope

The heavy vehicle productivity reform package that the Productivity Commission has been asked to provide advice on contains 5 elements:

1. Increasing heavy vehicle road access to reduce emissions and increase productivity.
2. Accelerating the establishment of a National Automated Access System to streamline road access decision making for all heavy vehicles.
3. Accelerating implementation of the National Heavy Vehicle Driver Competency Framework.
4. Removing administrative and regulatory barriers to improve the availability of Heavy Zero Emission Vehicles (HZEV) charging infrastructure.
5. Reducing or removing curfews for HZEVs, with the aim to increase transport productivity for all heavy vehicles and support the uptake of HZEVs.

This submission focuses on the areas where Austroads has direct knowledge and experience, which are the first 2 proposals under investigation. These are:

- The implementation of the National Heavy Vehicle Driver Competency Framework, which responds to NCP Principle 5
- Increasing heavy vehicle road access to reduce emissions and increase productivity, which responds to NCP Principles 6 and 7.

Limited comments are provided on establishing a National Automated Access System, which responds to NCP Principles 6 and 7.

The Treasurer's request to the Productivity Commission refers to a 'package of reforms.' While the matters all relate to heavy vehicles, each matter has merit and can be progressed individually. Austroads has assessed and evaluated each matter on its own based on limited interdependency between matters.

1.3 About Austroads

Austroads is the collective of Australian and New Zealand road transport agencies, representing all levels of government. Austroads has 3 key roles:

- It saves roads and transport departments money by facilitating collaboration among member agencies on key issues and presenting key commonly owned research
- It improves national harmonisation of road construction, maintenance and operational practice to reduce interstate differences, thus improving outcomes for road users and road construction and maintenance companies
- It operates common services for members that enable one shared service that both saves money and improves harmonisation.

Austroads helps achieve these nationally beneficial outcomes by:

1. Ensuring agreement among member agencies on the problem to be solved or the opportunity to be seized and identifying the best solution
2. Collaborating with roads and transport department officials through a proven successful method to cooperatively develop agreed solutions and artefacts
3. Operating and or maintaining those outputs to ensure they continue to deliver benefits for the member agencies and for the communities they serve.

Austroads' history of collaboration, harmonisation and innovation stretches back more than 90 years, originating as the Conference of State Road Authorities (COSRA) and then the National Association of Australian State Road Authorities (NAASRA) from 1959 to 1989.

Austroads plays a similar role to 2 other organisations where states have constitutional responsibilities but the Commonwealth plays a national leadership role:

- Australian and New Zealand National Council for Fire and Emergency Services (AFAC), and
- Australia New Zealand Policing Advisory Agency (ANZPAA).

Similar to AFAC and ANZPAA, Austroads has:

- strategic direction set by a Board where each member has equal representation,
- activities and budgets approved by member representative forums, for Austroads that is Task Forces and approved by the governing body, for Austroads, that is the Board,
- practice doctrines (guides and guidelines, standards etc) approved by the Board and are expected to be adopted by members, and
- common services for member agencies proposed, developed, commissioned and operationalised subject to approval and oversight of the Board.

Driving harmonisation and collaboration

Austroads is an organisation that is well placed to assist, deliver and operate nationally significant initiatives that improve productivity and community well-being. In 2011 the Standing Council on Transport and Infrastructure (SCOTI) initiated a review of the NTC and other relevant transport bodies (including Austroads). The 2013 report on the Review noted:

> *The Austroads Board is independent of, and not formally accountable to [the transport ministers Council or the Transport Senior Officials Committee] – although some members of the Board are also TISOC members. While delivering on the transport Ministerial Council priorities is not Austroads primary purpose, Austroads … undertakes activities for the ministerial council and senior officials groups on an ad hoc basis.*

It further noted that:

> *Austroads is a very effective vehicle for encouraging collaboration across jurisdictions. The process of getting a project accepted onto the work plan, produced and cross-agency endorsed, is suitably rigorous for undertaking wide-ranging technical roads research and producing operational guidelines, but the arrangements are not as well suited to driving implementation or development of national reform, especially projects with shorter timeframes, which require strong top-down governance and change management arrangements. (p. 19)*

Austroads is the custodian of initiatives and practice that underpin effective outcomes across Australia's road and transport networks. In collaboration with members and subject matter experts, Austroads develops and maintains guidance and services that support nationally consistent approaches, driving efficiency and continuous improvement.

- *Guides, Guidelines, technical specifications, and harmonised practices* are developed through or overseen by peer-level forums of subject matter experts – and are adopted by member agencies.
- *Austroads services*, which are essential to keeping people and goods moving safely and efficiently, encompass:
    - National Exchange of Vehicle and Driver Information System (NEVDIS) – enables the secure exchange of vehicle and licence information across jurisdictions, supporting fraud prevention, vehicle provenance checks, identity matching, insurance processes, and safety recalls.
    - Transport Certification Australia (TCA) – ensures appropriate data governance and privacy controls through assurance and advisory services, administering the National Telematics Framework – a government-endorsed platform supporting programs such as the Intelligent Access Program, Telematics Monitoring Application, and the Road Infrastructure Management application.
    - The Telematics Analytics Platform (TAP) offers authorised users access to aggregated telematics data to support road safety, freight productivity, asset management, and sustainability initiatives.
- *Austroads leads national initiatives* that support the consistent application of best practice across jurisdictions, ensuring transport agencies can operate more efficiently and effectively together. Many of these efforts are initiated at the request of member agencies or ministers and are designed to address shared challenges and deliver nationally consistent outcomes. By reducing duplication, streamlining approvals, and enabling consistent implementation, harmonisation supports improved national economic productivity and better use of public resources. Key examples include:
    - development and dissemination of temporary traffic management guidance, training and device assessment
    - publication of Austroads' technical specifications
    - support for fitness-to-drive assessments and updates to the National Heavy Vehicle Driver Competency Framework
    - training related to temporary traffic management, road safety auditing and barrier installation

- prequalification of road and bridge contractors
- delivery of world-class digital driver licence solutions
- launch of national road safety ratings via the Australian Road Assessment Program (AusRAP).

Through these initiatives, Austroads helps align policies and improve safety for road users, agencies, and industry.

As noted in the 2012 *Review of the National Transport Commission and Other Relevant Transport Bodies*, Austroads functions are generally essential technical and practical services and products for members. As essential practical and technical services, Austroads is less involved in strategic national reforms. However, when invited to participate, Austroads brings a collective depth of knowledge that assists in designing and implementing strategic transport initiatives.

The operation and regulation of roads and road behaviour is a matter of state and territory responsibility. There is no specific power for the Commonwealth to legislate in respect of transport generally. The Commonwealth does have powers in relation to aviation, maritime navigation, commerce, trade, defence. The Commonwealth has responsibility for international treaties, which states and territories are obligated to apply to in-service vehicles and other aspects on vehicle and road regulation.

1.4 Challenges for harmonising national land transport reforms

The Productivity Commission has previously noted that harmonised approaches to regulating aspects of transport involves:

- careful planning and a shared commitment from all participating jurisdictions, which can be undermined by a lack of shared agreement on the detail of future regulatory systems
- consolidation of data sets and creating new systems, which can be challenging (Productivity Commission, 2020, p. 7)

Harmonisation of improved practices also involves consistent agreement on multiple variables, from each state and territory, at multiple levels of administration. This makes agreeing harmonised laws more difficult.

While Austroads has a role in delivering on objectives agreed by the Austroads Board or national forums such as ITMM and National Cabinet, they often require agreement on quite detailed or technical matters. This requires agreement at both the senior leadership level and at subject matter expert level within agencies.

Gaining agreement across levels of government is challenging and can result in suboptimal outcomes, due to what Fritz Scharpf describes as a joint decision trap. This is where multiple governments participate directly in decisions and de facto unanimity is required. Scharpf notes that decision-making can move towards a bargaining style that yields suboptimal, resilient outcomes rather than problem-solving solutions (Scharpf 1988).

Austroads has developed a reasonably robust model for agreeing, developing and implementing nationally consistent reforms. While the approach Austroads has followed has been effective in a multilateral context, it is no guarantee of success. It has been successfully applied with the National Heavy Vehicle Driver Competency Framework, which is substantially progressed.

Austroads can, if invited, apply this model to develop, implement and administer nationally consistent approaches for work under review by the Productivity Commission.

2. Heavy Vehicle Driver Competency Framework

The *Impacts of heavy vehicle reform: Call for submissions* notes that the Productivity Commission has been asked to analyse and model the impacts of accelerating the implementation of the National Heavy Vehicle Driver Competency Framework. The Productivity Commission is seeking views on:

- what are the largest hurdles for timely or accelerated implementation of these reforms
- what federal, state and territory or private bodies are expected to handle the various stages and aspects of implementation
- what timeframes are sensible for accelerated implementation of the reforms
- data relevant to quantitative estimates of productivity impacts of the reforms
- how best to quantify the impact of the reforms.

2.1 Establishing the Heavy Vehicle Driver Competency Framework

The National Heavy Vehicle Driver Competency Framework (NHVDCF) represents a critical reform for the heavy vehicle sector by harmonising competency standards nationally. When implemented, this reform is expected to:

- Improve safety outcomes, and thereby improve national prosperity, by ensuring drivers possess the skills required for complex vehicle operations.
- Boost national productivity by creating:
    - clear, consistent accelerated pathways for licence progression, and
    - a single national market for heavy vehicle driver trainers that will improve efficiencies in the driver training industry (consistent with NCP Principle 5).

The NHVDCF was an approach agreed in 2011 by the Standing Council on Transport and Infrastructure (SCOTI), the then ministerial council for transport matters. The agreement centred on vocational education qualifications for training and a stronger oversight of heavy vehicle driver training organisations.

The SCOTI agreement for the NHVDCF consisted of 2 parts:

1. Training and competency assessment requirements that an applicant must satisfy for a Driver Licensing Authority to deem the applicant competent to be issued with a heavy vehicle driver licence, including:
    - The Vocational Education and Training (VET) Licence to Drive Units for 4 heavy vehicle classifications - Light Rigid, Medium Rigid, Heavy Rigid, and Heavy Combinations.
    - The VET Licence to Operate Unit for a Multi-Combination Vehicle.
2. The regulatory, policy and administrative arrangements to support the training and competency assessment process (Austroads, 2011 a).

The NHVDCF was designed to be implemented by a single National Heavy Vehicle Regulator (NHVR), which at the time was under development as part of the Heavy Vehicle Reform Package. However, the Heavy Vehicle National Law did not provide the National Heavy Vehicle Regulator with authority or responsibility over heavy vehicle driver licensing. In the absence of the NHVR being granted responsibility for licensing, some states adopted aspects of the NHVDCF, but there was little consistency across adopting states.

2.2 History of nationally consistent heavy vehicle driver training and licence assessment in Australia

Since federation, all Australian states have applied their own approach to driver training and assessment to hold a licence.

In 1983 attempts to harmonise heavy vehicle driver licencing commenced, based on the heavy vehicle classifications developed by Austroads predecessor, NAASRA, and agreed by governments.

In 1984 the *National Road Freight Industry Inquiry* recommended a nationally administered heavy vehicle driver licence system. Evidence presented to that inquiry 'emphasised the non-uniform and at times, poor standards of truck driver training, testing and licensing' (May, et al., 1984, p. 161). Identifying the need for change was not sufficient.

In 1989, Prime Minister Bob Hawke announced his 10-point Road Safety Action Plan, which included a number of proposals for national consistency. This 10-point Road Safety Action Plan included a proposal national licensing of heavy trucks and bus drivers. Some elements were subsequently implemented, including the .05 blood alcohol limit and mandatory bike helmets (Seccombe, 1989, Cockburn, 1989, Clark & Moore, 1989).

The proposal for nationally consistent heavy vehicle driver training and assessment was not implemented as originally proposed. The Australian Transport Advisory Council (ATAC) instead agreed to ensure heavy vehicle drivers had only one licence. This was one of 2 key decisions that led to the creation of the National Exchange of Vehicle and Driver Information System (NEVDIS), developed and operated by Austroads.

In the mid-1990s the National Road Transport Commission (NRTC) developed draft Heavy Vehicle Registration and Driver Licensing National Laws that were ready for submission to ministers. However, NRTC's model laws do not appear to have been agreed by ministers (Hurlstone, 1995).

In 2008, the Commonwealth Government led a proposal to harmonise regulation related to heavy vehicles in a Consultation Regulatory Impact Statement (RIS).

The first part of the proposed 2008 reforms aimed to harmonise and consolidate heavy vehicle licencing, competency and registration that were and remain exclusively state and territory matters. Each state had a different approach to these matters and there were no model laws in existence for their harmonised regulation. The Consultation RIS proposed:

- a national heavy vehicle registration scheme
- a consistent approach to minimum standards for heavy vehicle driver competency and testing and to heavy vehicle driver training school recognition
- a single physical national heavy vehicle driver licence (DITRDLG, 2008, p. ii).

The second part of proposed 2008 reforms aimed to create a single national law that encompassed the existing model laws for heavy vehicle regulation, including 'vehicle standards, mass and loading, over-size and over-mass vehicle standards, restricted access vehicles, higher mass limits, licensing, driver fatigue management, speeding and associated compliance and enforcement activities.' The Commonwealth proposed that there would be 'provision for variations to enhance local productivity' (DITRDLG, 2008, p. ii).

Given the scale of these 2008 reforms, the proposal to include heavy vehicle driver licensing was not progressed.

In 2011, the Transport Ministers Council agreed to the adoption of the National Heavy Vehicle Driver Competency Framework, with each jurisdiction developing an implementation plan 'according to jurisdictional capacity to implement.'

In 2016-17 Austroads commenced a review of the implementation of the National Heavy Vehicle Driver Competency Framework. The Review of the National Heavy Vehicle Driver Competency Framework published in 2018 found that despite substantive efforts to achieve harmonisation, much of which has been successful and is to be acknowledged, there remained considerable variation in jurisdictional practice with regard to heavy vehicle licensing.' This included variation between jurisdictions that have implemented the NHVDCF.

In 2019, the Austroads Board approved the *National Heavy Vehicle Driver Competence Framework Stage 2 Implementation Guidance*. This guidance supported the key components of the NHVDCF, ensuring training competencies and materials and the heavy vehicle licence progression structure follow best practice and are fit for purpose. The guidance outlined an exemplar licensing framework for national implementation, which would establish the required standards for each class of heavy vehicle licence to:

- provide a uniform, national standard of heavy vehicle driver competence, training and assessment
- improve road safety outcomes
- improve public perception of the safety of heavy vehicle operations, and
- meet heavy vehicle industry needs for well-trained, safe heavy vehicle drivers.

In October 2021, the Austroads Board approved project SRL6354 *National Heavy Vehicle Driver Competency Framework – Implementation*, which aimed to adapt the exemplar framework for a more consistent approach to heavy vehicle driver licencing and training across Australia.

This decision led to the release in August 2022 of the *Consultation RIS – National Heavy Vehicle Driver Competency Framework*, consistent with the requirements of the *Principles and guidelines for national standard setting and regulatory action by ministerial councils and standard-setting bodies*.

In December 2023, the ITMM endorsed the NHVDCF through a Decision Regulation Impact Statement (RIS). This landmark decision established a nationally consistent approach to heavy vehicle driver training and licence progression, aiming to improve road safety outcomes and support the sustainable supply of skilled drivers for freight and passenger transport.

2.3 NHVDCF progress since 2024

Following the ITMM endorsement in December 2023, Austroads initiated a comprehensive implementation program to operationalise the NHVDCF. The program is governed through a multi-tier structure:

- Steering Committee – providing strategic oversight and alignment with ministerial priorities and is comprised of senior officers from each state and territory department responsible for driver licensing and the Commonwealth department,
- Implementation Working Group – coordinating technical development and is comprised of staff involved in registration and licensing processes in the state and territory departments, as well as and the Commonwealth department
- Industry Reference Group – ensuring practical applicability and responsiveness to industry needs, and is comprised of those from the heavy vehicle training industry, and various other industry stakeholders with an interest in heavy vehicle driver licensing.

Since early 2024, Austroads has convened multiple consultation sessions with jurisdictions, training providers and industry stakeholders. These sessions have informed iterative improvements to training materials and shaped the NHVDCF implementation roadmap.

The NHVDCF implementation program is organised into 4 primary workstreams:

1. **Training and Assessment Materials**
    - Developing comprehensive training and assessment resources for all heavy vehicle licence classes (Light Rigid, Medium Rigid, Heavy Rigid, Heavy Combinations and Multi Combinations), supporting knowledge acquisition, classroom and practical in-yard and in-cab activities.
    - Materials have undergone multiple iterations, with Version 5 delivered in December 2025 following extensive industry testing.
2. **Digital Learning Platform**
    - Austroads appointed market-leading vendor Nexefy/Compono to design and deliver a Learning Management System (LMS) to support digital delivery of training and assessment.
    - The LMS will enable consistent application of knowledge acquisition and competency standards across jurisdictions, and provide a scalable solution for future enhancements.
3. **Industry Testing and Review**
    - Pilot programs with selected jurisdictions and Registered Training Organisations (RTOs) have validated the usability and effectiveness of training materials.
    - Feedback loops ensure continuous refinement and alignment with operational realities.
4. **Hazard Perception Testing and Accreditation**
    - Development of hazard perception testing protocols tailored to heavy vehicle operations.
    - Establishment of an accreditation framework for trainers and assessors to ensure quality and integrity in competency assessment.

In 2024 Austroads engaged LRES Training Management to develop the Training and Assessment Materials for learning packages. This is divided into 3 parts:

1. online training and assessment to be permitted to advance to the interactive elements
2. classroom training, including attitudinal training
3. practical in-vehicle and in-yard training.

The learning packages were developed for following of classes of heavy vehicles:

- Light Rigid (LR)
- Medium Rigid (MR)
- Heavy Rigid (HR)
- Heavy Combination (HC)
- Multi Combination (MC)

On 9 May 2025, Austroads sent these packages to state and territory officials for initial feedback. Feedback from most of the state and territory departments was received within 3 weeks although some others were substantially longer. Three states and territories sought active engagement and feedback from the training and heavy vehicle sector in their jurisdiction at the same time as feedback from officials.

Testing has focused on the Heavy Rigid training materials, and outcomes will inform the development of the other heavy vehicle classes. This material has been iteratively developed with state and territory government officials and with heavy vehicle driver trainers and with the heavy vehicle industry more broadly.

Since the first draft was produced in May 2025:

- **Over 30 industry-based trainers and assessors** from across the country have provided substantive feedback, bringing frontline expertise and real-world operational experience to the materials' refinement.
- The materials have been **promoted at 7 industry-based events** across multiple jurisdictions, raising awareness of the NHVDCF program and jurisdictional engagement.
- Austroads has captured **over 1,000 lines of detailed feedback** and systematically revised and improved the materials through 4 successive drafts.
- A **Technical Reference Group** has been established with jurisdictions to resolve differences in opinion, reflect national best practice and accommodate regional needs as appropriate.
- Conducted **2 site visits in metropolitan and regional Victoria** to hear first-hand from trainers and assessors.
- Completed an **initial test and trial activity in Tasmania**, in the field with a leading training and assessment provider.
- Planning is underway for **in-field test and trial activities in NSW in January and NT in February** to further refine the training materials.

Testing Heavy Rigid training in Tasmania.

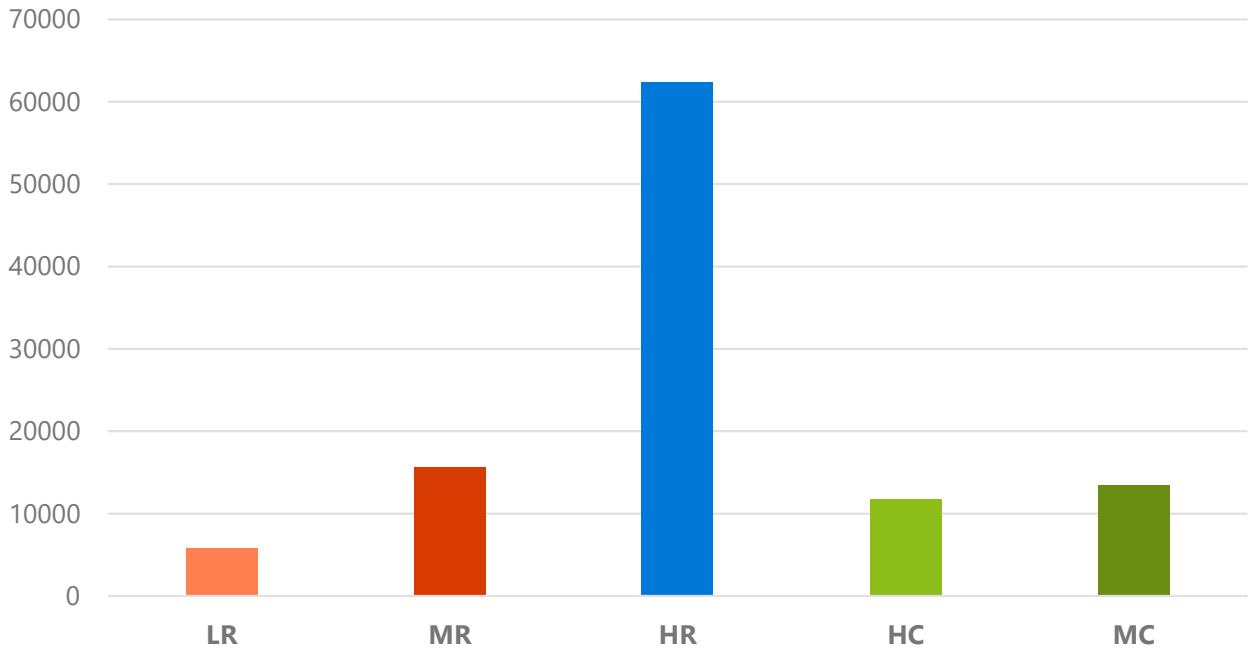
The test and trial activities are part of a cumulative validation process to refine and validate the materials' suitability across diverse training environments. The completed test in Tasmania and the planned activities in NSW and NT are an important part of a robust engagement process that will validate and ensure the final materials are thoroughly tested and nationally applicable.

Testing Heavy Rigid training in Tasmania.

Training materials have intentional repetition by design to reinforce critical concepts and continually build competency. This ensures core knowledge and driving competency is built regardless of whatever classification level drivers start at and is reinforced as they progress through heavy vehicle classifications. This approach has been well-received by industry professionals and aligns with the learning framework approved by states and territories as part of the NHVDCF.

Available data shows that most drivers start learning at the Heavy Rigid classification, and a small subset progress to combination vehicles. Drivers don't generally start at a Light Rigid classification and work their way up.

Figure 2.1: Estimated new heavy vehicle driver licences issued each year in Australia



Note: Estimate is based on available data from states and territories. Qld and ACT data was not available.

2.4 Economic benefit of the NHVDCF

The Decision RIS calculated that NHVDCF could reduce heavy vehicle crashes by up to 8% and generate sizeable net present value and cost-benefit returns for the economy.

The Decision RIS did not include the economic benefit to the training industry of having one consistent national driver licence training and assessment system.

Australia's heavy vehicle driver training market is composed of many smaller training providers (many are RTOs), spread across all states and territories. The fragmented nature of the heavy vehicle driver training industry combined with different approaches in each state and territory inhibit the benefits of scale of a nationally consistent scheme for driver training being realised.

Austroads welcomes the Productivity Commission's analysis on how a nationally consistent training and trainer oversight system could benefit the economy by:

- facilitating economies of scale for training providers
- enabling those training providers to serve national fleets
- deploying best-practice programs more widely without repeatedly customising for each jurisdiction.

2.5 Response to the Productivity Commission's questions

What are the largest hurdles for timely or accelerated implementation of these reforms?

Austroads is continuing to pursue the systems, processes, training materials, governance structures and artefacts to enable states and territories to implement the NHVDCF from the second half of 2026.

Each state and territory developed implementation plans that were noted by the Austroads Board and presented, without alteration, to ITSOC in October 2025.

States and territories have supported the NHVDCF as a priority. State and territory officials are progressing a pragmatic implementation of reforms to reflect the decision of relevant ministers.

Some states and territories are struggling with the pace and complexity of the reforms, potentially due to a range of local issues. Consequently, this creates resistance to quick and pragmatic collaboration. This is typical for implementing multilateral, national reforms.

Austroads is working in response to the needs of jurisdictions implementing reforms at a faster pace, and accommodating those jurisdictions working at a slower pace through a transition-period approach.

What federal, state and territory or private bodies are expected to handle the various stages and aspects of implementation?

Austroads is leading the national aspects of NHVDCF implementation, including development of the training and assessment materials, learning management system, heavy vehicle hazard perception test clips, a standard and compliance framework for training providers and post implementation evaluation.

State and territory agencies responsible for driver licensing are implementing the reform in their jurisdiction. This is typically being undertaken by transport agencies and customer service agencies.

The implementation task varies in each licensing jurisdiction based on requirements to:

- amend local legislation, regulation or policies
- existing arrangements overseeing training and assessment

- in-sourcing and outsourcing arrangements, particularly for assessment activities
- local industry practices.

Training providers and industry will have implementation roles, including adopting the training materials and conforming to standards and compliance requirements. In the case of heavy vehicle operators and drivers, they are self-selecting to participate in the 'driver experience' or 'supervision' accelerated licensing pathways.

Austroads, as the collective of Australia's roads and transport agencies, will own and maintain the training syllabus and related system to ensure the heavy vehicle driver competency framework remains fit for purpose.

What timeframes are sensible for accelerated implementation of the reforms?

Austroads expect that all states and territories will be able to implement the NHVDCF in a window from 2026 until 2028. This window will enable states and territories who are ready to implement first, while allowing time for others to proceed when they have capability. The 2-year window will minimise the opportunity for 'jurisdiction shopping' for an easier licence test.

Leading jurisdictions are on track to be able to implement the NHVDCF from the second half of 2026. These jurisdictions are positioned to move forward without creating barriers to timely implementation.

National reforms often face timing challenges when simultaneous implementation is required across all jurisdictions. This is because the slowest jurisdiction can set the overall pace.

To address this challenge, Austroads has designed the NHVDCF implementation program to include a transition period, allowing jurisdictions to progressively adopt the framework. This approach means that any delays in one jurisdiction, such as those caused by resourcing constraints, will not prevent others from proceeding when they are ready.

What data is relevant to quantitative estimates of productivity impacts of the reforms?

Austroads worked with Frontier Economics to produce a Decision RIS in December 2023. The Decision RIS was endorsed by transport ministers through the ITMM.

It is important to note that road safety was a primary driver of the NHVDCF reform.

NHVDCF productivity elements are included and outlined in the Decision RIS. These productivity elements include:

- accelerated licence progression, supporting increased use of higher productivity vehicles
- reduced crashes, equating to less road deaths, hospitalisation or time off work, and less property damage including vehicles and freight
- a single, consistent training approach, reducing the need for duplicative training package development and use
- centralised governance and auditing reduce duplication of compliance checks across jurisdictions, freeing resources for operational tasks.

How best to quantify the impact of the reforms?

The Decision RIS qualified the benefits of adopting the reform as being around $1.8 billion over 30 years, primarily through improved road safety, reduced crash costs. A $1.4 billion positive benefit was estimated after accounting for costs.

While the Decision RIS quantified the safety benefit, there is opportunity for the Productivity Commission's analysis to estimate the economic benefit of a nationally consistent training and trainer oversight system that delivers economies of scale for training providers.

3. Heavy vehicle road access to reduce emissions

Decarbonisation of road freight is crucial in achieving net zero targets agreed to by all levels of Australian government. Decarbonising the heavy vehicle fleet will likely increase the usual mass of heavy vehicles, particularly the steer and drive axles of heavy vehicles. This is because the power source (the battery) for a low or zero emission heavy vehicle imposes its load on the steer and drive axles, rather than the trailer.

3.1 Heavy vehicle road wear and damage

There is a direct and exponential relationship between the mass of a heavy vehicle and the wear or damage it does to a road. Increased mass can result in increased wear – but the damage is exponential, not linear. This is known as the fourth power rule, because the stress on the road increases to the fourth power of the axle load. So a 10% increase in axle weight does not cause 10% more wear – it causes roughly 46% more wear.

As the Commonwealth Government's Bureau of Transport and Communications Economics has noted, road damage has always been a problem for Australia's roads. Attempts have been made to restrict road damage by:

- restricting vehicle weights, axles and tyres
- charging for road damage, usually on the basis of the load carried or some other indicator of the potential for damage (Luck & Martin, 1988, p. 1).

Big Transports Breaking Roads

Overloaded heavy transports, many of them inter-State vehicles, are responsible for extensive damage to Australian roads.

Australians are now becoming aware of this damage, similar to that experienced in America.

An officer of the Department of Transport yesterday quoted a recent example in U.S.A. where a single trip by an overloaded semi-trailer between Pittsburgh and Fogelsville caused £5000 damage to roads.

In Victoria a few years ago, he said, damage estimated at £7000 was caused to the Murray Valley Highway by a convoy of about 12 overladen trucks.

Victorian Country Roads Board experience is that many of the trucks causing damage to Victorian roads come from inter-State, chiefly from New South Wales.

Over-loading in N.S.W. is not subject to the same strict supervision as in Victoria, and compensation for damage to roads generally cannot be obtained. Much of this damage is done below the road surface and is not immediately detected.

Damage General

Australian road maintenance costs are rising steadily, as they did in the U.S. until recently when the great cost led to rigid enforcement of legal load limits.

The Transport Advisory Council, under the chairmanship of the Minister for Transport (Mr. Ward) recently authorised draft regulations, to be considered by State Governments.

These will aim at uniform control of road traffic to minimise highway damage.

7,000,000 Acres for Ex-Servicemen

Properties so far approved for soldier settlement throughout Australia total 1167, involving 7,207,709 acres. Greatest acreages are in New South Wales and West Australia.

In Victoria 118 properties (270,883 acres) were approved up to April 30 this year; most will be used for dairying and fat lamb production.

These details were released yesterday by the Minister for Post-War Reconstruction (Mr. Dedman).

Source: The Age, 13 August 1949, p 6

- increased routine maintenance/resurfacing frequency
- reduction in level of service (as the pavement ages more rapidly) resulting in increased vehicle operating costs
- reduced structural life of the existing pavement, bringing forward road reconstruction and the necessary funds earlier than expected
- increased reconstruction costs due to the increase in required structural capacity
- added constraints and cost of control measures (e.g. lower speed limits, signage, turning lanes, lane widening, islands, pedestrian or cycleways, removal of spillage to maintain safety and restore smooth traffic flow)
- environmental impacts of maintenance and repair (i.e. gaseous emissions and noise pollution).

3.2 History of managing heavy vehicle road access in Australia

For more than 75 years, Australian governments have been managing the consequences of demands for increased vehicle masses and the effects on the roads network.

Since the 1960s, increases in permissible mass and axle loads of heavy vehicles have been informed by the costs versus benefits, and often matched with attempts to recoup the increased in maintenance costs from heavy vehicle operators.

The last significant uniform increase in permissible masses was in the 1980s. This increase was based on the Review of Road Vehicle Limits (RoRVL) study undertaken by Austroads' predecessor, NAASRA.

The NAASRA study found that across the range of vehicle loads from 38 to 42.5 tonnes for a six-axle truck, there were increasing returns to scale. RoRVL showed that the benefit cost ratio fell rapidly when moving progressively upwards from 38 tonnes, and the ratio was negative after 42.5 tonnes.

Calculation of the costs and benefits in the past have been straightforward, as it was relatively easy to calculate the productivity benefit of increased carrying capacity of heavier vehicles. More mass generally meant more freight carried and more productivity. There was a direct correlation between the mass of the freight carried, the total mass of the vehicles and the cost of the wear from the additional mass on a road.

For low or zero emission heavy vehicles, calculating the costs and benefits is more complicated, as more mass doesn't directly equate to more freight carried, but also lower or no emissions.

The Productivity Commission's call for submissions notes that vehicles over a specified weight face access restrictions on some roads. While there is not a specified increase nominated by the Productivity Commission, the Australian Trucking Association has recommended an increase from 6.5 tonnes to 8.0 tonnes on a single steer axle and adding 1.5 tonnes to the tandem drive group for electric trucks, with a longer-term goal of 8.5 tonne steer and a 2.0 tonne uplift on the tandem drive.

3.3 Rationale for accelerating the uptake of zero emission heavy vehicles

All Australian governments have committed to eliminating carbon emissions by 2050 or earlier. The transport sector accounts for about 22% of Australia's total greenhouse gas emissions, making it the third-largest source nationally. Approximately 18% of all greenhouse gas emissions comes from road vehicle use.

Heavy vehicles are disproportionately high emitters because of their high energy demand and reliance on diesel. The Australian Renewable Energy Agency (ARENA) projects that heavy vehicle emissions could increase by 16% by 2040 without intervention.

Vehicle electrification represents one of the best options to decarbonise road transport. For light vehicles – and lighter heavy vehicles – this can be achieved within current laws. Road managers anticipate manageable increases in pavement wear due to expanded use of these vehicles.

Heavy vehicle operators seek 'parity' to support transition to electric vehicles. Comparable payload and range for electric heavy vehicles means increasing steer and drive axle masses beyond general access limits (based on currently available technology and performance).

3.4 Challenges of increased steer and drive axle masses on pavements

Accommodating zero-emission components, such as batteries, would usually concentrate the additional mass on the truck's steer and drive axles, rather than distributing it to the trailer axles where the payload is carried.

Adding weight to the steer and drive axles causes disproportionately more damage to the road due to a combination of engineering physics, the fourth power rule and tyre mechanics.

Steer axles guide the vehicle and apply sideways (transverse) forces when turning, which can twist and shove the road surface. Additionally, steer axles have single tyres rather than dual tyres that are on trailer axles. Therefore the weight is concentrated into a smaller contact area on the road's surface, which does more damage than if the same mass was spread over a larger area.

Drive axles provide power to move the vehicle forward, applying strong longitudinal forces to the pavement. They 'grip' the road more than trailer axles and create horizontal stress on a pavement surface. Heavier drive axles and higher torques associated with electric vehicles increase road damage. The combination of heavy vertical weight and the horizontal 'gripping' causes the seals to deform and creating deep ruts, especially at intersections or on slopes.

Trailer axles mainly transfer weight downward without significant turning or driving forces, so they can carry more mass with less pavement damage compared to steer or drive axles. Depending on the trailer design, trailers can have dual, tri or quad-axle groups which further distribute the load – allowing for greater load carrying capacity and improved load distribution.

Figure 3.1: Examples of steer, drive and trailer axles

Source: nhvr.gov.au 11 December 2025

Australian roads are particularly vulnerable to rapid damage caused by heavier axle masses. Australian road pavement design standards were developed to connect a population dispersed widely over a large continental land mass. Cost-effective and pragmatic design choices were informed by a historically dry climate conditions over most of the Australian continent.

See https://austroads.gov.au/publications/freight/ap-r725-25.

Figure 3.2: Pavement rutting: longitudinal vertical deformation of a pavement surface in a wheelpath

Source: renolith.com.au 11 December 2025

Figure 3.3: Pavement shoving: Lateral displacement of pavement structure by braking, accelerating or turning vehicles

Source: from Guide to the Visual Assessment of Pavements, QTMR

3.5 Response to the Productivity Commission's questions

What are the appropriate reforms to assess under this proposal (e.g. increases in general mass limits under the HVNL)?

Current arrangements allow most heavy vehicles to be electrified

A large majority of the heavy vehicle fleet could be transitioned to electric vehicles and remain within existing legal axle mass limits. This means that these heavy vehicle types could operate as electric without additional regulatory changes or special axle mass limit permissions.

Conventional vehicles that operate at or close to allowed axle mass limits may face greater challenges for electrification.

The Heavy Vehicle National Law review presents opportunities

The ongoing Heavy Vehicle National Law review provides a platform to consider increasing axle mass limits, subject to jurisdictional agreement. At the time of writing, the NTC is consulting on increasing general mass limits. These increases may facilitate electrification for additional heavy vehicles without special permissions.

Enhance and expand the use of existing access instruments

Current Heavy Vehicle National Law mechanisms – notices and permits – already allow restricted access vehicles to operate on approved routes.

These instruments can:

- provide interim solutions for electric heavy vehicles that exceed standard axle mass limits
- enable targeted trials and data collection to inform permanent reforms.

There may be opportunities to streamline notice or permit provisions for electric heavy vehicles. This could include systems such as the National Automated Access System, which essentially provides a high fidelity and adaptable access under a notice, or potentially a national, state or regional/route notice for electric heavy vehicles.

Consideration of road and infrastructure maintenance

The use of these access instruments will need to consider the additional cost of road wear and infrastructure maintenance, and how that would be managed. As electric heavy vehicles are a nascent technology, road managers may need to monitor developments in battery densities, which could lead to reduced axle masses for electric heavy vehicles over time.

Like other vehicles with high axle masses, road managers may need to apply conditions to access to mitigate risks, such as regulatory telematics (through Transport Certification Australia), road-friendly suspension or wide single tyres.

What are the additional costs of road wear and infrastructure maintenance?

Pavement wear and damage increase exponentially with axle mass. Any increase of mass on the steer and drive axles will result in damage to road pavements. The impact on road pavements will be greatest where vehicles brake, accelerate or turn (e.g. intersections). Increased mass on the steer and drive axles will also exacerbate pavement damage where road pavements are waterlogged (e.g. after flooding or wet weather events).

Austroads is undertaking work to quantify the damage that would be caused by increasing heavy vehicle steer and drive axle masses, and from that to derive the marginal maintenance costs. This work is expected to be completed in early 2026. The analysis is currently being reviewed by pavement and asset management experts.

Initial findings from the analysis are that in the short term, increased steer axle masses will result in reduced pavement life cycle leading to more frequent road works, and increased costs of road maintenance. The embodied costs of more frequent road maintenance will partially offset the benefits of decarbonising the fleet.

In the longer term, increased steer axle masses will result in road managers specifying a more expensive standard for road design and rehabilitation projects. This will inflate road construction costs. The length of the Australian road network means that it would be a multi-generational project to rebuild the road network to the same standard as northern hemisphere jurisdictions, such as Sweden and the United Kingdom.

Structures are also at risk from heavier vehicles. Austroads has recently updated guidance on bridge assessments for heavy vehicle access. Current bridge design codes would provide suitable capacity to accommodate increased steer and drive axle masses. However, the vast majority of the existing bridge stock was built before the current code and may need additional strengthening. Structural engineers will need to assess whether increased steer and drive axle masses (and corresponding increased gross combination masses) can be accommodated.

See https://austroads.gov.au/publications/bridges/ap-g109-25

What are the intersections with other infrastructure barriers necessary to take up reformed regulation?

Direct road user charging for heavy vehicles has been under active consideration by the Commonwealth since February 2006, when the Council of Australian Governments (COAG) agreed to ask the Productivity Commission to develop proposals for efficient pricing of road and rail.

Following the completion of the 2007 Productivity Commission Inquiry into Road and Rail Freight Infrastructure, COAG agreed a Road Reform Plan (CRRP). This was under development under a changed name of Heavy Vehicle Road Reform until at least 2023-24.

In September 2025, Commonwealth, state and territory treasurers agreed on a statement to guide further work on a road user charge for electric vehicles. This statement also outlined an approach including fair and sustainable funding for road investment, whilst ensuring any changes are timed to enable the productivity, climate and consumer benefits of increasing electric vehicle uptake.

Although beyond the purview of the current inquiry being led by the Productivity Commission, it should be highlighted that Austroads manages 2 separate but complementary systems that can provide a critical link to link vehicle movement and loading information with vehicle registration information:

- The National Exchange of Vehicle and Driver Information System (NEVDIS); and
- National Telematics Framework (NTF) – further information on which is provided in section 4 of this document.

As each of these systems are managed by Austroads, it means they are owned and directed by each transport department across Australia and New Zealand.

Both systems provide the necessary levels of integrity, security and privacy protections for road use charging. When combined, they allow for data on location and time to be collected in a standardised way to provide governments with the greatest policy flexibility in considering options for road use charging reform.

What are the implementation issues, including how governments should apportion any increased road infrastructure costs between levels of government?

The Productivity Commission has previously argued that transport modes, including heavy vehicles should pay their way (Productivity Commission, 2006). The costs resulting from increased use of electric heavy vehicles will be borne by the road owners of the roads where these vehicles travel, and therefore cost recovery from heavy vehicle operators should be proportionally distributed to road owners.

How can imported vehicles comply with both international and domestic standards to allow vehicles (including heavy zero emission vehicles) to be imported without being repurposed?

Most electric vehicles, including electric heavy vehicles, will not face any unique compliance burdens. Larger vehicles, with correspondingly large and heavy batteries, may exceed axle mass limits and require alternative access arrangements.

What is the availability of data on road use, the structure of the road network, and different heavy vehicle users (and user industries)?

Transport Certification Australia (TCA) administers the National Telematics Framework, which monitors the movements of some of the largest vehicles on our network. TCA has extensive data on the movements of restricted access heavy vehicles. Decisions to apply telematics monitoring as a condition of access to Australian road networks are made by road transport agencies (in their capacity as road managers under the Heavy Vehicle National Law (HVNL), and other relevant laws in those jurisdictions which do not participate in the HVNL).

4. Accelerating a National Automated Access System for heavy vehicles

The National Automated Access System (NAAS) is the nationally-agreed platform for managing permit-less heavy vehicle access across Australia.

Australian law restricts heavy vehicles above specified mass, dimension and loading limits travel on public roads. These laws aim to reduce infrastructure damage and serious harm to other road users, including pedestrians.

Vehicles above standard mass, dimensions or loading in Australia require legal approval to travel on a public road, either through:

- a permit – specific to a type of vehicle and a route and is approved on application to the NHVR or a road manager, or
- a notice – a public advertisement of routes that vehicles of a specified type, that comply with weight, size, dimension limits, can travel on without seeking a permit.

The NAAS is being developed as a system with the potential to offer the best of permits (specificity and use of all available access capacity) and notices (administratively simple and instant 'permissioning').

4.1 Austroads involvement in automated heavy vehicle access in Australia

In May 2022 the Austroads Board approved project *NEF6393 Contemporary Heavy Vehicle Access Decision Making for Road Managers* to enable a national automated access system based on the lessons from Tasmania's development of the Heavy Vehicle Access Management System (HVAMS).

In September 2022 the ITMM endorsed the concept of a national automated access system to be accessed through the national heavy vehicle regulator portal, now known as NHVR Go.

In May 2023 the Austroads Board endorsed a draft inception report for project NEF6393, which included an outline for a staged approach to progressing the project.

As part of Stage 1, Austroads produced a number of draft documents that among other things, captured stakeholder requirements and assessment practices and mapping solutions, and the resulting policy settings and high-level architecture and associated design of the NAAS. These documents were shared with the NAAS project team.

In May 2024 the Austroads Board resolved to pause work on project NEF6393 once Stage 1 deliverables were completed. Work would not recommence on the project until agreed by the Austroads Board. Austroads has had limited involvement in the development of the NAAS since that Board decision.

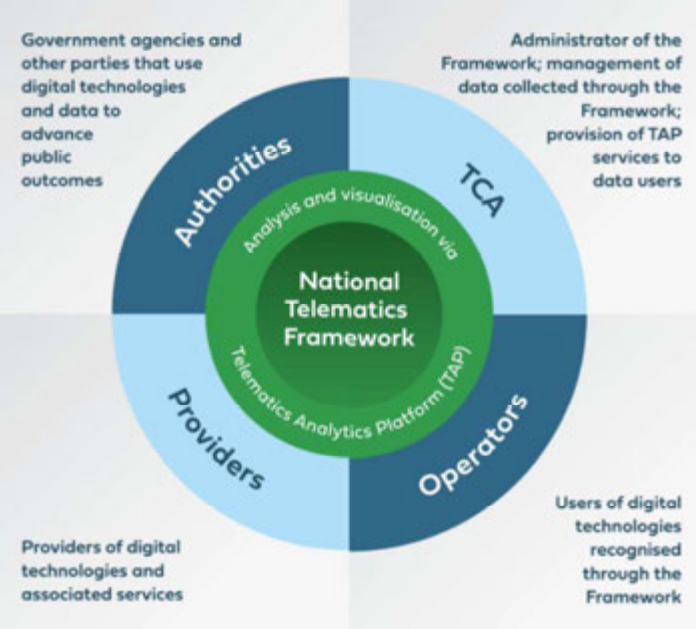
4.2 Response to the Productivity Commission's questions

The Productivity Commission seeks views on views, data and evidence in relation to the National Automated Access System. This includes availability of data on road use, the structure of the road network, and different heavy vehicle users.

Transport Certification Australia (TCA) is a subsidiary of Austroads responsible for assessing and recognising telematics and other vehicle-based technologies. TCA helps Australian transport agencies collect data from vehicles in ways that are trusted by government and industry and to provide data and analytical services that enable improved road outcomes.

TCA administer the National Telematics Framework which is reflected in the International Standard what was jointly developed by TCA. ISO 15638: *Framework for Collaborative Telematics Applications for Regulated Commercial Vehicles* provides the following for cooperative telematics applications for regulated commercial freight vehicles.

- A framework for the provision of cooperative telematics application services for regulated commercial freight vehicles
- A description of the concept of operation, regulatory aspects and options and the role models
- A conceptual architecture using an on-board platform and wireless communications to a regulator or his agent
- References for the key documents on which the architecture is based
- Details of the architecture of the facilities layer
- A taxonomy of the organisation of generic procedures
- Common terminology for the ISO 15638 family of standards.



The Telematics Analytics Platform (TAP) and the Telematics Data Platform apply the National Telematics Framework to collect data about some heavy vehicles on Australia's road network.

TAP is a secure, online platform that provides road transport agencies, policy makers, planners, engineers and researchers with access to aggregated, deidentified vehicle movement and loading information across the Australian road network.

The data and insights offered through TAP are supporting improvements to heavy vehicle access and investment decision making processes, which contribute to advancements in freight productivity, asset management and sustainability.

Figure 4.1: The National Telematics Framework

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