Queensland Department of Transport and Main Roads (TMR)

Submission in response to the National Transport Commission Issues Paper 'Effective fatigue management' (May 2019)

The Department of Transport and Main Roads (TMR) notes the information in the 'Effective fatigue management' issues paper covers a broad range of issues for consideration by stakeholders to generate discussion about ways to better manage driver fatigue and increase safety under the Heavy Vehicle National Law (HVNL).

Provided below is information TMR trusts will be helpful in developing policy options for consideration in the upcoming consultation regulatory impact statement (RIS). It is important that the RIS consider options that will draw out the essential elements to identify, assess and manage the risks associated with fatigue in the heavy vehicle industry, in a structured way supported by research and data evidence. TMR suggests that in contemplating potential policy interventions, the following priority areas should be considered:

- 1. HVNL objects
- 2. Regulatory principles
- 3. Regulated fatigue risks
- 4. Alignment with workplace health and safety approaches
- 5. Streamlined work and rest rules
- 6. Record keeping requirements
- 7. Fatigue-regulated heavy vehicles

Note that the information provided in this document raises points for consideration and discussion for the purposes of the HVNL review and does not form government policy.

1. HVNL objects

The purpose of the HVNL is to ensure the safe operation of heavy vehicles on the Australian road network, while managing the impacts on infrastructure, environment and public amenity, and in a way that supports safe, efficient and innovative business practices. This needs to be achieved using approaches that promote road user safety, and optimise the sustainable use of infrastructure, vehicles and resources, to benefit industry efficiency and the broader community.

The HVNL objects need to be clear about the priority and interaction of potentially conflicting objectives and that safety considerations take precedence where conflicts arise between objectives. The potential for conflict between safety and efficiency objectives is particularly relevant to the decisions made by policy makers, regulators and industry that impact on the fatigue management of heavy vehicle drivers. The safety outcomes and objectives of the law must be established and agreed early in the HVNL review process to provide a solid foundation for the development of effective policy principles and options.

The national focus on road safety has been recognised through the establishment of the Office of Road Safety by the Australian Government and by the development and review of National Road Safety Strategies¹. This safety focus was reinforced by the Transport and Infrastructure Council (the Council) by making Road Safety a standing item for the Council agenda and stating its commitment to developing the next National Road Safety Strategy based on a target of zero fatalities in its August 2019 Communique².

All Australian governments have adopted the Safe System³ approach to managing the risk of death and serious injury on our roads. The reviewed HVNL should reflect this safety focus.

¹ Australian Government National Road Safety Strategy 2011-2020

² Transport and Infrastructure Council (2 August 2019) Communiqué

³ National Road Safety Strategy, The Safe System approach <u>Safe System principles</u> (2018).

2. Regulatory principles

As outlined in TMR's response to 'A risked-based approach to regulating heavy vehicles', TMR agrees that a set of HVNL regulatory principles is useful in guiding the work of the review, particularly in the development of policy proposals for consideration in the RIS and in the eventual drafting of the new HVNL.

While the draft principles presented in the paper cover a broad range of the issues that should be considered, many of them are overly complex. TMR suggests the draft regulatory principles be refined to make clear guiding statements. TMR offered examples of such principles for consideration in response to the risk-based regulatory approach issues paper. These are particularly relevant to managing safety risks such as fatigue and are provided below.

The HVNL should:

- Manage the material risks to the agreed HVNL outcomes demonstrated by clear evidence
- Have the scope and coverage to effectively manage the material risks above
- Adopt the regulatory model that recognises the risk severity, and the regulated party's expertise, willingness and capacity to identify, develop and implement risk controls
- Apply demonstrated regulatory best practice
- Place obligations as low in the hierarchy of legislative instruments as is appropriate and with regard to fundamental legislative principles
- Support, and provide the tools for, a risk-based approach to regulatory activities and enforcement that delivers proportionate and fair responses to risk management failure
- Be responsive and flexible to support innovation in technology, diverse industry needs and regulator risk-based operations
- Support continuous improvement in achieving the agreed HVNL outcomes
- Support national consistency, where possible, provided the agreed HVNL outcomes are not substantially compromised

Overarching principles such as these could be supplemented by additional principles that are aimed at improving the approach of the HVNL to fatigue management arrangements in particular.

The HVNL fatigue management arrangements should:

- Ensure safe heavy vehicle operations
- Be supported by current fatigue research and data
- Align with workplace health and safety (WHS) and safety management system (SMS) approaches
- Streamline work and rest rules for drivers and remove unnecessary complexity or repetition
- Simplify recordkeeping requirements
- Support use of fatigue technologies as a component of a fatigue risk management system
- Provide flexible compliance approaches that ensure safety and recognise the limits of the operator's expertise, ability and capacity to manage fatigue risks.

3. Regulated fatigue risks

The fatigue management provisions in the new HVNL should be supported by current fatigue research and consider as many of the factors that may affect a driver's fatigue risk as possible within the scope of the HVNL. As shown by Figure 3 (p16)⁴ in the issues paper, there are many complex and interrelating factors that impact on a driver's fatigue.

The RIS should consider the impacts of other factors beyond prescribed work and rest limits on a driver's alertness. Factors such as lifestyle, family commitments, sports and recreational activities, volunteering and undertaking non-heavy vehicle work, combined with the cumulative effects of fatigue, sleep loss and extended wakefulness, all impact negatively on a driver's fitness to work safely. As will a driver's approach to prioritising sleep during time not spent at work. These impacts must be recognised, and risks mitigated through appropriate interventions.

The Cooperative Research Centre (CRC) *Heavy Vehicle Fatigue Management Project: Final Project Report*⁵ confirms findings of previous research and provides a useful summary of the fatigue impacts of various shift schedules that could guide new fatigue management arrangements.

Current arrangements

While HVNL section 228 includes a requirement for drivers to not drive while impaired by fatigue⁶, it does not adequately address many of the known fatigue risk factors.

Under the Standard Hours regime risk factors are limited to prescriptive limits on work and rest time. However, while there is room for improvement, the Advanced Fatigue Management (AFM) module does address many of the known fatigue risk factors and is aligned with SMS and risk management principles. To a lesser extent, the Basic Fatigue Management (BFM) module also addresses a broader range of fatigue risk factors.

The issues paper could have been improved by a more thorough explanation of the AFM and BFM modules under the National Heavy Vehicle Accreditation Scheme (NHVAS). Identification of the positive and negative characteristics of AFM and BFM should be included in the RIS to aid comparison of potential options with the existing arrangements.

Sleep and wake time

The current HVNL approach relies heavily on work and rest rules to manage fatigue. However, the rules alone cannot ensure that a driver will be unimpaired by fatigue and fit for duty. A broader approach could be considered that recognises more of the known fatigue risk factors, including the importance of sleep and wake time in helping to determine whether additional safety countermeasures may be required to safely manage a driver's shift to completion.

Supported by a risk management system and appropriate training, an enhanced approach to assessing a drivers' fitness for duty could be developed with helpful triggers for action provided by simple algorithms supported by research evidence, such as the work of Dawson and McCulloch (2005)⁷, *Managing fatigue: It's about sleep*, and Darwent et. al. (2015)⁸ *Managing fatigue: It really is about sleep*.

⁴ National Transport Commission (May 2019) Effective Fatigue Management Issues Paper

⁵ Cooperative Research Centre (CRC) for Alertness, Safety and Productivity (February 2019) *Heavy Vehicle Driver Fatigue Project: Final Project Report*

⁶ Section 228, Heavy Vehicle National Law (Queensland)

⁷ Dawson, D. and McCulloch, K. (2005), <u>Managing fatigue: It's about sleep</u>, *Sleep Medicine Reviews*, v.9, p365-380.

⁸ Darwent, D., Dawson, D., Paterson, J.L., Roach, G.D., and Ferguson, S.A. (2015) <u>Managing fatigue: It really is about</u> <u>sleep</u>, Accident Analysis & Prevention, v.82, p20-26.

Fitness for duty

A holistic approach is needed to manage driver fitness for duty as a shared responsibility between operators and drivers to ensure drivers are healthy, competent and in a fit state to safely perform the required heavy vehicle transport tasks. Fitness for duty measures should encompass both proactive planned approaches and day-to-day management practices.

Proactive approaches include those safety initiatives that are embedded in an operator's systems and procedures to improve the likelihood that a driver will be fit for duty. These may include requirements for medical and health checks, training for drivers and managers, rostering and scheduling procedures and other operational policies that recognise the impact of lifestyle and nonwork factors that can impact fitness for duty.

Day-to-day management practices are designed to assess and manage a driver's fitness for duty both prior to commencing a shift and during a shift. These practices may include assessing fitness by drivers checking in with managers or drivers undertaking a self-assessment, and actively managing any identified risks by reducing work hours or increasing rest opportunities for the shift based on the driver's fitness for duty on the day or ceasing driving or other safety critical duties.

4. Alignment with workplace health and safety approaches

The Vehicles as a Workplace: Work Health and Safety Guide⁹ released by Austroads in March 2019 recognises vehicle use in road traffic is the most significant contributor to work-related traumatic injury. The guide describes a process for dealing with road traffic hazards in line with WHS legislation and road traffic safety (RTS) principles. The guide notes:

"Safe Work Australia reports that 64% of worker traumatic injury fatalities since 2003 have involved a vehicle, with 50% of these incidents occurring on a public road. In 2016, there were 98 work-related fatalities recorded by Safe Work Australia involving a vehicle on a public road. However, this significantly under-states the true situation. Road traffic safety agencies recorded 213 people killed in crashes involving heavy vehicles during 2016. Most of these crashes would have been work-related."

The recent amendments to the chain of responsibility provisions of the HVNL were closely modelled on WHS duty of care approaches. Any changes to the safety requirements under the HVNL should be aligned to the WHS model wherever possible to reduce costs and allow for efficiencies in operators' risk management and safety management systems.

Further clarity and simplification of the law may be achieved through investigating areas where HVNL provisions cross over into WHS and other legislative frameworks such as road rules. This would identify overlaps of regulation and provide the opportunity to assess how best to remove unnecessary duplication, and draft complimentary and supporting provisions that will improve outcomes for the community, industry and government. Alignment with, rather than duplication of, existing obligations in other legislative frameworks would provide the necessary measures to reduce risks and increase safety without unnecessarily expanding the scope of the HVNL. This approach may also mitigate the risk of redundancy and conflicts in future iterations of the HVNL and other related legislative frameworks.

Risk management systems

Fatigue management schemes using a risk management approach (such as the National Heavy Vehicle Accreditation Scheme (NHVAS) Advanced Fatigue Management) have been in place for many years. Evaluation of the safety benefits and outcomes of these schemes could be used to shape enhanced fatigue safety management systems for managing heavy vehicle driver fatigue. As well, consideration should be given to future implementation of collecting and analysing data from a 'no-fault reporting' system on near miss incidents to develop a more comprehensive data set and create greater understanding of the impacts of fatigue and guide continuous improvement. A safety management systems approach under the HVNL could be developed in collaboration with WHS organisations such as Safe Work Australia and WorkCover Queensland which provide guides¹⁰ and fact sheets¹¹ designed to help industry develop safety systems.

An additional approach for consideration may be the development of simple clear information (reference guides) on meeting driver health, fatigue management and safety obligations. Guides may cover topics such as legislative requirements, medical checks, driver fitness, managing fatigue risk, and the availability of and requirement to attend training.

⁹ Workplace Health and Safety Queensland, Vehicles as a Workplace; Work Health & Safety Guide March 2019

¹⁰ Safe Work Australia, <u>Guide for managing the risk of fatigue at work</u> November 2013

¹¹ WorkCover Queensland, Forms & resources, <u>Guides and fact sheets</u>

5. Streamlined work and rest rules

Australia permits much longer hours for heavy vehicle drivers than is considered acceptable in many other places around the world. Heavy vehicle operations often involve long distances and night work which results in increased fatigue risks. Ensuring safe heavy vehicle operations given these operational considerations is one of the key design challenges for future fatigue management policy.

Implementing significant changes to regulated work and rest limits that aligns with current fatigue research evidence would likely require an extended transitional period or staged implementation to manage potential impacts on driver income and to allow operational adjustments to be made.

Possible options for streamlining work and rest rules include:

- Reviewing short rest break rules to allow drivers more flexibility in how they take their rest and significantly reduce rule complexity.
- Consider a change in focus to managing sleep opportunities rather than work time to manage fatigue risks.
- Reduce cumulative work hours over a weekly or fortnightly period to allow daily flexibility but manage the cumulative effects of long working hours.
- Allow for infrequent flexibility, within set limits, for managing work and rest times such as an additional hour for unexpected delays or occasional use of split rest breaks (for example, 6+2 hours in place of 7 continuous hours rest) to suit driver needs.
- Recognising the higher risk impacts of long shifts, nightwork and multiple consecutive shifts be reducing the maximum daily work time or increasing the minimum rest time required for these types of schedules.
- Weighting work time to strongly discourage driving during particularly high-risk periods such as midnight to 3am.
- Remove current confusion over whether nose-to-tail shifts are permitted and discourage backward rotating shifts by outlining maximum work and minimum rest limits that total 24 hours, for example, by providing for 12 hours of work and 12 hours total rest in 24 hours (described as minimum 12 hours rest with at least one period of 7 continuous hours).
- Consider a range of tailored work and rest rules for specific transport activities that recognise the risks and flexibility needs of those activities, for example, local daytime delivery, overnight interstate freight, livestock transport, long distance charter coach or two-up driving.
- Investigation into the management of the work and rest times for drivers of long distance bus services should also be investigated.

Appropriate work/rest limits should be developed following research and analysis of relevant current evidence available on causes of fatigue and best practice fatigue management approaches. New streamlined work and rest rules could be guided by a variety of sources including:

• The findings of the CRC final project report¹² which confirms findings of previous research and provides a useful summary of the fatigue impacts of various shift schedules.

¹² Cooperative Research Centre (CRC) for Alertness, Safety and Productivity <u>final project report</u>¹² submitted to the NTC 25 February 2019

- Rostering guidelines such as those produced by Safe Work Australia¹³.
- European Commission regulations¹⁴ around driving times and rest periods for passenger transport and heavy vehicle operations.
- Research papers could support the development of easy to calculate thresholds that could identify potential increased risks, trigger appropriate countermeasures and operate within a safe management systems framework. For example, assessing a driver's sleep in the previous 24- and 48-hour period and how long the driver has been awake prior to commencing work could help determine whether a driver is likely to be fit to commence and complete the planned shift. The results of this assessment could trigger and guide the use of risk mitigation steps to safety manage the driver during the shift. Broad assumptions concluded that less than 5 hours of sleep in the 24 hours before work, and 12 hours of sleep in the 48 hours before work, could result in an unsafe driving environment. ^{15,16}

¹⁴ European Commission, Transport Modes, Road, <u>Driving time and rest periods</u>

¹³Safe Work Australia <u>Guide for Managing the risk of fatigue at work</u> November 2013

¹⁵ Drew Dawson, Kirsty McCulloch, October 2005, ScienceDirect articles Managing fatigue: It's about sleep

¹⁶ David Darwent, Drew Dawson, Jessica L. Paterson, Gregory D. Roach, Sally A. Ferguson, January 2015 Science Direct articles <u>Managing fatigue: It really is about sleep</u>

6. Record keeping requirements

The RIS should consider options for record keeping requirements that will reduce regulatory burden, improve the contribution record keeping requirements make to safety outcomes and identify the essential elements needed to determine whether safe fatigue management practices have been employed. These options should include simplifying written work diary requirements, combining the record keeping requirements for 100km and 100+km work into one consistent approach, and considering the potential benefits and costs of mandatory electronic work diaries.

Simplified work diary

Written work diary requirements could be simplified and improved in line with new streamlined work and rest rules. This could include reduced complexity, particularly around short rest break requirements. A code of practice could be implemented that supports a simplified version of the written work diary or provides templates for operators to use.

Consistent record keeping approach

While the fatigue management provisions under the HVNL apply to the operation of all fatigueregulated heavy vehicles, the HVNL currently has separate record keeping requirements for drivers engaged in local area 100km work and 100+km work.

The rules surrounding defining a driver's base, 100km work and 100+km work, and how to switch between the two record keeping regimes, add a significant amount of complexity to the HVNL. The current arrangements also provide limited oversight of heavy vehicle operations conducted within the 100km area.

The simplification of record keeping requirements would have flow on benefits in paving the way for a single uniform record keeping scheme under the HVNL. Combining simplified record keeping requirements for 100km and 100+km work would be further supported by identification of the essential fatigue management records needed to demonstrate safe fatigue management practices that could be outlined in regulation. This approach would also improve alignment with WHS approaches.

Electronic Work Diaries

The RIS should include consideration of the costs and benefits of introducing a requirement for the mandatory use of Electronic Work Diaries. Introduction could be completed over an extended period to minimise cost and disruption for industry during transition.

Digital tacographs to record distance, speed and driver driving and rest times have been in use in the European Union since 2006. Road side inspections are facilitated by personal driver cards with microchips and in-vehicle printers. The newly updated European Commission Regulation (EU) No 165/2014¹⁷ introduces provisions for smart tacograph devices which will be required in heavy vehicles registered from 15 June 2019. Enhanced features of this generation of tacographs include enhanced security, GPS interface, remote communication of data for enforcement and ability to link with other ITS applications.

Electronic recording devices would allow more secure and accurate data capture, automate calculations of work/rest rules, and would benefit the driver and operators with reduced record keeping effort and costs.

¹⁷ European Commission, <u>Tachograph - ec.europa.eu/transport/modes/road/social-provisions/tachograph_en</u>

7. Fatigue-regulated heavy vehicles

TMR suggests that the RIS should include an investigation of national road safety data and an analysis of whether a change in the definition of fatigue-regulated vehicle to include vehicles over 4.5 tonne and up to and including 12 tonnes is necessary to address safety risks.

Prior to implementing national model laws for the fatigue management of heavy vehicle drivers in 1998, Queensland legislation applied fatigue management requirements to all heavy vehicles over 4.5 tonnes. The fatigue management provisions of the current HVNL only apply to the use of fatigue-regulated heavy vehicles, which generally includes trucks or combinations with a gross vehicle mass (GVM) over 12 tonnes or a bus over 4.5 tonnes that is fitted to carry more than 12 adults (including the driver). This means that the HVNL does not expressly prohibit a person from driving a non-fatigue regulated heavy vehicle while impaired by fatigue.

The table below shows Queensland fatigue-related crashes from 1 January 2013 to 31 December 2017. These figures do not appear to indicate heavy vehicles less than 12 tonne GVM are significantly more at risk from being involved in fatigue related crashes.

Crash severity	2013	2014	2015	2016	2017	Total
Heavy vehicles > 4.5 tonne ≤12 tonne						
Fatal	0	0	0	0	0	0
Hospitalisation	6	2	5	1	2	16
Medical treatment	2	1	3	2	3	11
Minor injury	0	0	1	0	0	1
Total	8	3	9	3	5	28
Heavy vehicles >12 tonne						
Fatal	1	0	3	1	1	6
Hospitalisation	32	22	18	21	18	111
Medical treatment	12	13	8	7	12	52
Minor injury	6	3	4	2	4	19
Total	51	38	33	31	35	188

Queensland fatigue-related crashes 1 January 2013 to 31 December 2017

Note that for the purposes of data collection in Queensland crashes are recorded as 'fatigue-related' where any controller/driver involved (including pedestrians and bicycle riders) was attributed with either:

- "Driver Fatigue/Fell Asleep" identified by the reporting police officer; or
- "Driver Fatigue Related by Definition" in the case of a single vehicle crash involving a motor vehicle within a speed zone of 100 km/ h or greater during the typical fatigue times of 2pm to 4pm or 10pm to 6am.

8. Issues Paper Questions

Question 1 – How can we change our approach to fatigue management so we reduce fatigue-regulated incidents and deliver Australia's road transport task efficiently and safely?

Refer to information provided above.

Question 2 – What fatigue risks that are currently out of scope for the HVNL should be brought into scope? What is in scope that shouldn't be?

The new HVNL should recognise the importance of sleep and time awake on fatigue impairment and fitness for duty matters should be addressed under standard fatigue management requirements. Refer to *Section 3 'Regulated fatigue risks'*.

Refer to section 7 '*Fatigue-regulated heavy vehicles*' for information about the potential application of fatigue management requirements to vehicles with a GVM over 4.5 tonnes and up to 12 tonnes.

Heavy vehicle rest areas are not within the scope of the HVNL or the review. However, fatigue management safety outcomes are supported by appropriate spacing and availability of suitable rest areas. Improvements and investment in heavy vehicle rest areas continues to be encouraged and pursued through other initiatives at all levels of government, including the Queensland *Heavy Vehicle Safety Action Plan 2019-21*.

Question 3 – What are the key risk factors associated with long hours, night shifts and other work schedule factors? How do we account for the fact that not all work hours have the same risk without introducing excessive complexity?

The RIS should be guided by evidence and research in developing regimes that address the high fatigue risks inherent in particular transport activities. The CRC report¹⁸ confirms findings of previous research and provides a useful summary of the fatigue impacts of various shift schedules that could guide new fatigue management arrangements.

To provide a system that both effectively manages fatigue and provides flexibility for operators and drivers will require a certain level of complexity. The new HVNL should aim to provide regimes that streamline work and rest requirements, remove unnecessary duplication and are presented in a way that is simple for operators and drivers to understand and comply with.

Reducing shift length could be used to limit the impacts of higher risk activities. The Safe Work Australia 'Guidelines for Shift Design' ¹⁹ (2013, p14) recommends that shifts be limited to 12 hours (including overtime) or reduced to 8 hours if the shift is a night shift and/or the work is demanding, monotonous, dangerous and/or safety critical. This concept is supported by the findings of the CRC report²⁰ which found that shifts longer than 12 hours were associated with at least a twofold increase in drowsiness events, and that this increase in risk occurred after 6-8 hours when on night shifts (starting in the afternoon to evening) and after 15 hours for day shifts starting before 9am. The

¹⁸ Cooperative Research Centre (CRC) for Alertness, Safety and Productivity <u>final project report</u>¹⁸ submitted to the NTC 25 February 2019

¹⁹ Safe Work Australia (November 2013), <u>Guide for managing the risk of fatigue at work</u>,

²⁰ Cooperative Research Centre (CRC) for Alertness, Safety and Productivity (February 2019) Heavy Vehicle Driver Fatigue Project: Final Project Report

report suggests that limits would be appropriate for on shift duration, the number of consecutive shifts, backward rotating shifts and nose-to-tail shifts with only 7 hours consecutive rest breaks.

A more flexible approach that may support productivity while managing risks would be to adjust a driver's allowable hours of work in a period based on the level of risk associated with that risk. For example, a simple formula could be used to weight hours of the day to limit night work hours between 10pm and 5am and even more strictly between midnight and 3am.

Question 4 – How should a new HVNL address driver health and lifestyle factors? What kinds of controls could be effective?

The RIS should consider the impacts of the broader factors that may affect a driver's alertness and fitness for duty, not just work and rest hours. Activities such as family commitments, leisure pursuits, volunteering and undertaking non-heavy vehicle work may all impact negatively on a driver's fitness to work safely. These impacts must be recognised and managed. Industry should develop strategies for addressing these risks, including shift-by-shift assessment of a driver's fitness and formulating systems for ongoing management and prevention.

TMR suggests the RIS should consider:

- appropriate measures to educate the heavy vehicle industry about factors that may impact a driver's fitness for duty and ability to work safely, including the impacts of work demands such as time pressures, road rage, trauma, psychological hazards²¹ and isolation
- fitness for duty assessments to ensure drivers are able to work safely
- methods for managing a driver's work hours and driving task according to their fitness for duty on the day (for example, through guidelines or codes of practice, or by reducing work hours or increasing rest opportunities for the shift based on the driver's fitness for duty on the day)
- encouraging technology use, such as fatigue monitoring devices and electronic record keeping, may also assist with managing drivers' fitness levels
- developing tools or systems in collaboration with industry to ensure ongoing assessment and management of driver fitness
- requiring timed medical clearances confirming driver fitness for duty
- recognising driving-task specific risks such as those associated with the delivery of public passenger services (tight schedules, road works and congestion, confrontational passengers)
- work-related pressures such as scheduling, loading/unloading and delivery deadlines and anticipating peak hour congestion
- travel to/from place of work (distance from base, drive-in-drive-out arrangements).

²¹ Safe Work Australia (January 2019), <u>Work-related psychological health and safety: A systematic approach to meeting</u> <u>your duties</u>, National guidance material.

Question 5 – How do we ensure the HVNL is agile enough to adopt best practice fatigue management as it emerges? How do we encourage continuous improvement?

Moving the bulk of the fatigue management obligations from the primary legislation to subordinate legislative instruments will improve the flexibility and responsiveness of the law to changes in research evidence and best practice approaches. Providing flexibility through adoption of SMS and risk management approaches to meet safety duties will also allow operators to develop innovative approaches to managing their fatigue risks. This approach should allow an operator to implement fatigue management strategies that reflect the size and complexity of their transport activities and should be designed to ensure safety within the limits of the operator's expertise, ability and capacity.

SMS approaches would need to be supported by work and rest limit guidelines that align more closely with modern WHS shift design approaches and best practice from other industry sectors and jurisdictions.

Question 6 – How can we better accommodate emerging technologies? How can the new HVNL get the best value from technology and data? Do you think fatigue monitoring technology can supersede work and rest hour requirements?

Technology should be used as a method to support risk management systems and methodology, but not be adopted as a replacement for these strategies. Technological advances should be adopted in a responsive and flexible manner. New technology may offer additional safety benefits in managing heavy vehicle driver fatigue by encouraging real time monitoring of compliance with other relevant safety regulations, such as speeding.

Recognising that the most important factors in predicting whether a person is likely to be impaired by fatigue is sleep and time awake, it is unlikely that technology will be able to entirely replace work and rest requirements. Fatigue monitoring technologies have the potential to provide an additional warning and defence mechanism that would disrupt a potential accident from occurring, however, they should not be relied upon as a replacement for a holistic approach to fatigue risk prevention and management.

Question 7 – How can the new HVNL meet the needs of all Australian states and territories? What should the new HVNL adopt from Western Australia and the Northern Territory, other transport modes and other industries' fatigue management approaches?

TMR agrees there may be safety benefits achieved through investigations into identifying and adopting some of the safety practices of other jurisdictions which may result in the uniform safe, efficient and productive movement of freight across the country. However, it is TMR's view that while there could be benefits to national consistency, it should not be pursued if it would result in adverse impacts on safety outcomes or undue restrictions on local productivity initiatives.

National consistency would be supported, wherever possible, provided the agreed HVNL outcomes are not compromised.

Question 8 – Are prescriptive rules desirable in a new HVNL? If so, how can we simplify rules in the HVNL to make them easier to understand so that they're easier to comply with?

Prescriptive rules are a useful method of setting minimum safety standards for operators and drivers. Further comments are provided under *Section 5 'Streamlined work and rest limits'*.

Fatigue provisions need a level of prescription around work and rest hours to provide a basis for drivers' understanding and basic safe management of fatigue. However, moving forward, a tiered approach to fatigue risk that more closely aligns with WHS and SMS approaches and employs performance-based regulatory models, such as an enhanced Advanced Fatigue Management Scheme, should be investigated.

Question 9 – Would the compliance options described in section 4.5 be a more effective approach to regulating fatigue management? If so, what should be included in the new HVNL, its subordinate documents, or elsewhere, such as in work health and safety laws? How would the appropriate fatigue management option be allocated to an operator – by self-selection or other means?

The HVNL needs to adopt the regulatory model for fatigue management that recognises the risk severity, and the regulated party's expertise, willingness and capacity to identify, develop and implement risk controls. The self-assurance or self-regulation regulatory model is not a desirable approach for this issue as it does not clearly meet the criteria for this approach (Sparrow, 2012)²².

A combination of prescriptive rules plus a performance-based safety management system may provide an effective and flexible approach to regulating fatigue management that could meet the needs of large and small operators. This approach could be underpinned by research evidence, rostering guidelines and appropriate oversight and would allow flexibility for operators to take on more risk management responsibility, while continuing to provide prescriptive alternatives for operators who prefer specific requirements to be detailed in legislation.

Question 10 – Should the new HVNL give operators the option of taking full responsibility for risk management? What would be the roles of the regulator and roadside enforcement in such a system?

The self-regulation or self-assurance regulatory model is not the preferred approach due to high levels of expertise and risk management maturity demanded of the regulated parties, and the high risk of conflicts of interest for industry in managing the balance between productivity and safety. There are significant opportunities for improvements in safety through investigating the performance-based regulatory model and streamlining prescriptive approaches.

²² Sparrow, M.K. (2012), Chapter 3 – 'Unraveling a Risk-Management Challenge' in *Ports in a Storm: Public Management in a Turbulent World*, Eds J.D. Donahue and M.H. Moore, Brookings Institution Press, Washington. (p25-54).

Question 11 – How can we get the best overall value from a compliance and enforcement strategy for fatigue management? How are scarce resources best allocated, and what tools do regulators need? What provisions in the law do operators need?

The current fatigue management provisions focus heavily on the driver. The new HVNL needs to support compliance and enforcement activity that also focuses on the role of the operator in ensuring safe fatigue management practices and meeting their chain of responsibility obligations.

Penalties for fatigue breaches should appropriately reflect the level of risk and consider repeat offending to ensure the penalty is commensurate with the overall safety risks.

The RIS should consider a review of fatigue risk breach penalties to consider other matters such as the degree of non-compliance of offenders, the degree of the safety risk to themselves and other road users and a history of offending. For example, minor breaches which are administrative in nature may incur a reduced penalty or educational compliance response, while a critical level offence may have an increased penalty, allow for a term of imprisonment in the decision or an order to use electronic work diaries or other business practices that would ensure improved future compliance.

Question 12 – What else would you like to tell us about effective fatigue management?

No further information to add.

The information provided in this document raises points for consideration and discussion for the purposes of the Heavy Vehicle National Law Review and does not form government policy.