

**2017 Utilities Forum:**  
**31 August 2017**  
**Ibis Hotel – Murray St – Perth**  
**Final Report**

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Prepared with support from the Utilities Forum Working Group:



**Attending Delegate Organisations:**

APA Group | ARRB/NRSPP | ATCO Gas | CGU/IAG | Electra Net | Energex | Essential Energy | Holden | Horizon Power | Hydro Tasmania | Optus | Origin Energy | Rio Tinto | SA Power Networks | SA Water | Sleep for Health | Vodafone | Water Corporation | Worley Parsons

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## Summary

The National Road Safety Partnership Program (NRSPP) recognises the value of a national forum specifically for utilities from around the country. This sector is characterised by complex and diverse fleets and the forum provides an opportunity to identify common transport risks and how they may be mitigated. The aim is to provide a forum where organisations from the utilities sector can discuss their major transport risks, how they are mitigated, benchmark road safety performance and how KPIs are influenced.

The forum achieved the following key outcomes:

- Through the Utilities Forum Template, which partners completed ahead of the day, an understanding of participants' capabilities and limitations with respect to fleet management data and key lag and lead safety performance indicators.
- A strong industry specific repository of fleet profile and risk data.
- Understanding of key safety issues common throughout the participant group.
- Facilitated sharing of learnings and information on what worked for other organisations, what did not work and what proactive approaches have been implemented by other organisations.
- The development of a strong peer network that was evident through the formal sessions and continued informally throughout breaks during the day and the evening's networking event.
- The industry led development of solutions to organisational transport risks, specifically developing and implementing innovative fleet safety and management solutions through peer networks.
- Developing improved driver and fleet safety culture, reducing vehicle incidents and near misses while maintaining peer communications and learnings on fleet safety and management.
- Recognition by participants that the forum fulfilled expectations, and that they will continue to engage with the working group and attend future events.

At the conclusion of the forum, participants were asked to provide feedback on the event. A short questionnaire covering aspects of the profile template, workshop format, content and delivery was provided.

Overall feedback was overwhelmingly positive and the outcomes, comments and feedback documented during the event provide strong support for the continuation of the program in a manner and frequency to be determined by the working group. The forum agreed that another will be repeated in 2018, hosted by APA Group in Sydney.

## Introduction

The National Road Safety Partnership Program (NRSPP) recognises the value of a national forum specifically for utilities businesses from around the country. This sector is characterised by complex and diverse fleets and the forum provides an opportunity to identify common transport risks and how they may be mitigated. This year the forum was held in Perth, hosted by the Water Corporation of Western Australia and strongly represented by utilities from across the country.

## Background

The Australian utilities sector is often state and service sector focused in its operations. The type of transport related operations involved requires a complex mix of vehicles to maintain the assets they are responsible for. Vehicles range from light to heavy and often include customised vehicles for specific tasks relating to the asset. Depending on the utility provider, constructing, operating and maintaining the company's assets may also include establishing and servicing roads to access them. These road assets may be publicly accessible or solely for the use of the utility provider.

The establishment of the Utilities Forum facilitated knowledge sharing across states, services and organisations. It provided an opportunity for utilities operating in all states to meet in a single location with an aligned and focused purpose, that being road transport safety.

## Scale of the Road Safety Problem 2003—2015



Australian research indicates that road crashes are one of the leading causes of work related fatalities, injuries and absences from work. From 2003 to 2015, 65% of worker fatalities involved vehicles. Over one-third of all worker fatalities arose from injuries that involved a vehicle on a public road, one-third involved vehicles not on a public road and the remaining one-third did not involve a vehicle. Further, 89% of worker fatalities involving vehicles on public roads were the result of a collision. In 2015, 59% of worker fatalities involved a vehicle.

Across the 13 years of the series, two-thirds of  
**worker fatalities involved vehicles**  
 In 2015, 115 of the 195 fatalities  
 (59 per cent) involved a vehicle.



Figure 1 Infographic — Source: Safe Work Australia



**From 2003 to 2015, the utilities and telecommunications sector recorded over 2% of all worker fatalities.**

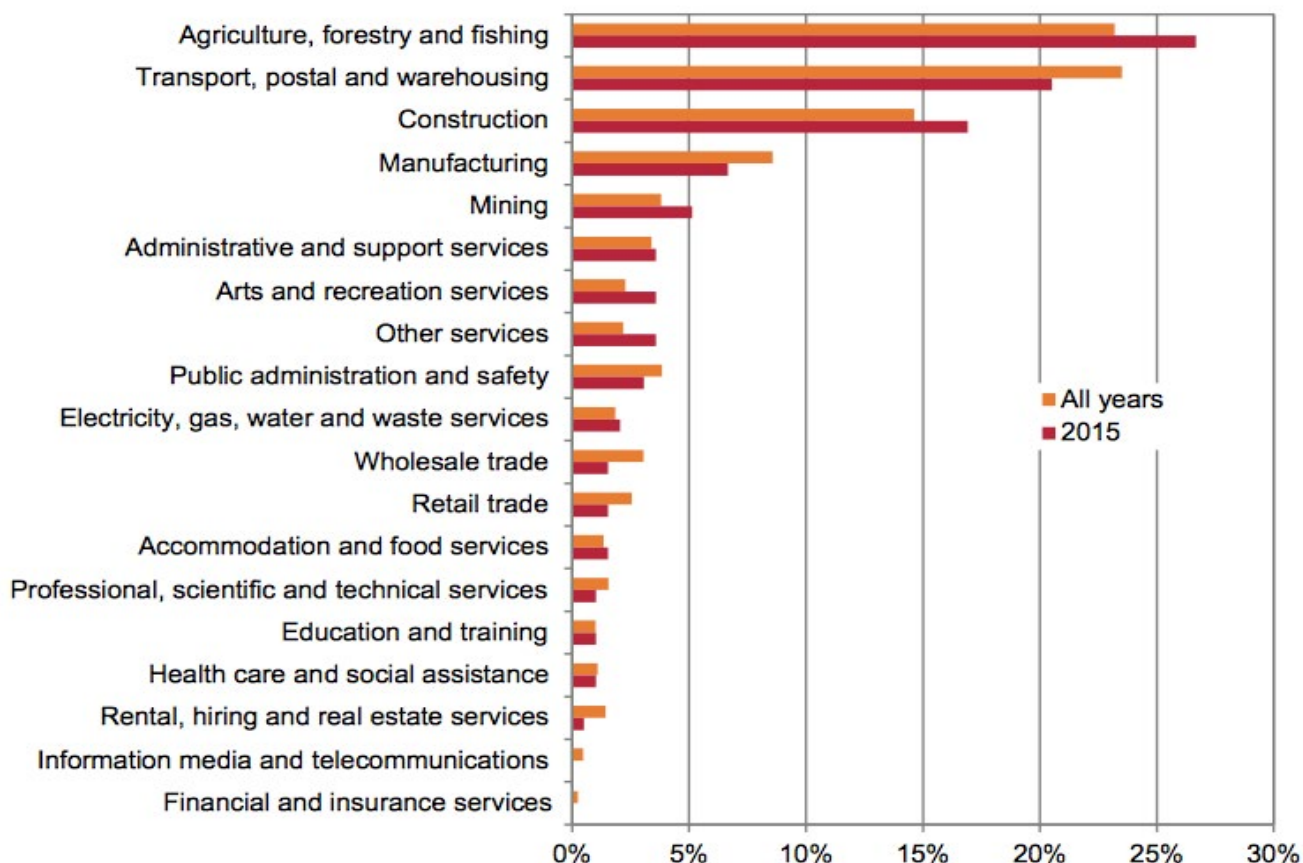


Figure 2 Fatalities by Industry Sector 2003-15 – Source: Safe Work Australia

Updated Safe Work Australia statistics published 29 September 2017 attributed vehicle incidents to 45% of fatal injuries in 2016, however these statistics do not detail vehicle involvement in the “Being hit by moving object” category (29%).

The updated statistics also record eight fatalities (or 5.8 per 100,000 workers) in the electricity, gas, water and waste services sector. This sector incurred the third highest rate of fatality following agriculture, forestry and fishing, and transport.

### Industry, 2016



Figure 3 2016 Fatalities by Sector — Source: Safe Work Australia

Research also shows work related road crashes cost the Australian community approximately \$1.5 billion annually (Davey, 2005). Further, based on Australian workers' compensation data, work related road crash injuries are estimated to cost approximately \$500 million a year.

Safe Work Australia (2017) provided NRSPP directly with claims data for the electricity, gas and water sector and the communications sector. The data

showed overall reductions in the number of serious claims from 1250 in 2010/11 to 895 in 2014/15 for the electricity, gas and water sector and from 700 to 590 over the same period for the communications sector. The median compensation paid in these respective sectors increased from \$13,433 in 2010/11 to \$16,117 in 2014/15 for the electricity, gas and water sector and decreased from \$11,600 to \$10,500 for the communications sector.

Electricity, gas and water	2010/11	2011/12	2012/13	2013/14	2014/15
No. of serious claims	1250	1180	1015	960	895
No. of serious claims involving vehicles	65	75			
<b>No. of serious claims involving vehicles for 2010/11 to 2014/15</b>					<b>240</b>
Incidence rate (serious claims per 1000 employees)	5.7	6.3	4.9	5.3	5.8
Frequency rate (serious claims per million hours)	3	3.3	2.6	2.7	3.1
Median time lost (weeks)	9.8	9.8	9.8	9.8	9.8
<b>Median compensation paid</b>	<b>\$13,433</b>	<b>\$15,267</b>	<b>\$16,933</b>	<b>\$22,783</b>	<b>\$16,117</b>

Electricity, gas and water	2010/11	2011/12	2012/13	2013/14	2014/15
No. of serious claims	700	755	600	610	590
No. of serious claims involving vehicles	65	75			
<b>No. of serious claims involving vehicles for 2010/11 to 2014/15</b>					<b>325</b>
Incidence rate (serious claims per 1000 employees)	3.5	3.7	2.8	3.2	2.8
Frequency rate (serious claims per million hours worked)	3	3.3	2.6	2.7	3.1
Median time lost (weeks)	4.8	6	6.2	4.6	4.2
<b>Median compensation paid</b>	<b>\$11,600</b>	<b>\$13,200</b>	<b>\$14,500</b>	<b>\$12,800</b>	<b>\$10,500</b>

Table 1: Serious Claims

## Methodology

The Utilities Forum Guiding Partners, consisting of Telstra, Origin Energy, SA Power Networks, SA Water, Hydro Tasmania, Water Corporation and CGU/IAG, steered the direction and development of the forum.

### Stage 1. Develop a Profile and Risk Template

With the assistance of the working group, a data template was developed that allowed capturing of information in the following key areas:

1. Business profile
2. Fleet size
3. Ownership and management model
4. Operating environment and utilisation
5. Technology profile
6. IVMS purpose and profile (if installed)
7. IVMS thresholds (if installed)
8. How the IVMS thresholds (if installed) were determined
9. Systems and process development
10. Lead indicator capture
11. Near miss (hazard reporting)
12. Driver training documents
13. Journey management plans
14. Journey management plan documents
15. Lag indicator capture
16. Infringement type capture
17. Infringement statistics
18. Insurance and crash information
19. Vehicle incident reporting
20. Identified transport risks
21. Fatigue management policy
22. Major organisational fatigue risk
23. Shift times and rosters
24. Fatigue training, education and support
25. Fatigue systems and technology
26. Fatigue related incidents
27. Forum expectations and outcomes.

The data was then collated and prepared for presentation at the forum. It was also used to produce benchmarking reports for individual organisations, indicating where each organisation was at with respect to Driving Risk Management in relation to the rest of the forum participants. The template was also instrumental in developing resources and the agenda for the forum.

### Stage 2. Conduct Utilities Forum

After the first two events in Adelaide and then followed by Melbourne, Water Corporation in Perth hosted the third forum on 31 August 2017. The forum itself took place at the Ibis Hotel in the Perth CBD.

Seventeen delegate organisations attended the day. Understandably the tyranny of distance resulted in a slight reduction in attendance by out-of-state utilities (nineteen in Melbourne 2016), however strong representation by West Australian organisations ensured good numbers for the day. In addition, guest presenters and four resource sector delegates attended afternoon sessions, remaining through to the conclusion of the day.

The event commenced at 8:30 am and concluded at 5.30 pm with a program that, based on the previous forum and evaluation, provided by attendees at the end of the day was:

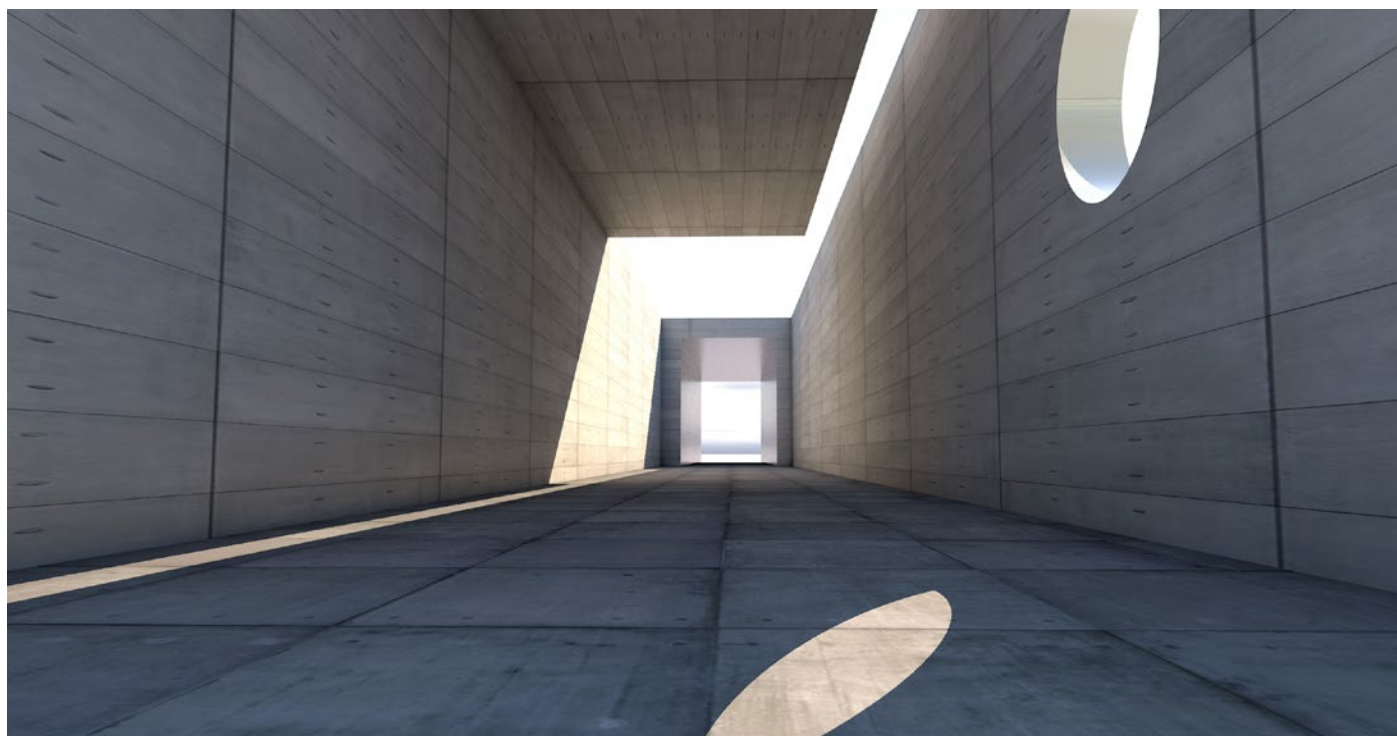
- engaging
- relevant, and
- focused

Similar to previous forums, the event followed a structured format that comprised:

- welcome and overview of the NRSPP
- setting the scene (the list of participants)
- ascertaining the size and scope of the transport safety risk
- presenting the profile and benchmarking data captured in the template
- an overview and presentation on insurers and their role in road safety education
- a presentation on vehicle safety technology and mass by Holden
- a presentation on sleep, why it matters, risk and consequence by Dr Carmel Harrington
- a presentation on Fatigue Management by Dr. Paul Roberts
- a group workshop and discussion on fatigue management
- a wrap up/review of key risks and planning for 2018, and
- dinner hosted by NRSPP.

### Stage 3. Feedback Forms

Forum participants completed a feedback form at the end of the forum. This will be used to inform the template design, content and format of future events.





## Utilities Forum

Seventeen participant organisations met to identify and discuss common transport risks and safety issues. The forum provided for facilitated discussions on what the different organisations were doing, what had and hadn't worked, and areas for further improvements. From the outset, participants engaged in discussion freely, exchanging perspectives and experiences.

One of the outcomes of the day was the extensive knowledge sharing, which included participation in general discussions and presentations on diverse issues such as the effects of vehicle safety technology and mass distribution, a highly relevant and informative topic in a sector operating large numbers of tool of trade vehicles. Delivered by Mark Wakeman, a lead specialist engineer at GM Holden, the presentation emphasised the effects of loading mass on vehicles and how it impacts on performance and handling.

A video Mark showed highlighting the effects of loading 300kg onto a Holden Colorado, the loaded vehicle being clearly less stable when performing manoeuvres at high speeds compared to the unloaded vehicle.

Mark went on to provide insight into how the inertia of a load increases stopping time, distance and duration of an impact. What many did not realise is when a fully loaded vehicle is involved in a low speed crash, the high mass of the vehicle makes it more comparable to a high speed crash due to the greater momentum. For older vehicles, this is a greater risk to occupants as the air bags may not deploy because the car thinks it is in a low speed crash and therefore not necessary.

The theme of the day was strongly influenced by the topic of fatigue and sleep management. Indeed, it was the topic of sleep deficit and its effects on cognitive function, presented by Dr Carmel Harrington, that was very well received and appeared to resonate strongly with the delegates. The following NRSPF blog excerpt from the forum provides insight.

### Asleep at the wheel

*Sleep expert **Dr Carmel Harrington** presented the 'science of sleep', explaining why sleep is important to brain, physical and mental health and our ability to perform.*

*While Carmel acknowledged there were many elements to managing fatigue, increasing understanding of sleep and how it affects fatigue helped manage fatigue risks, she said.*

*Policies on fatigue are often aimed at compliance rather than engaging staff in understanding the role quality sleep plays in managing fatigue. The prevailing attitude in the industry is often 'I'm tough' or 'I'll sleep when I'm dead' with not sleeping considered demonstrating commitment to the job.*

*"Incrementally, without realising it, we've cut back on sleep time — 50 years ago our average sleep was 8.5 hours, now we sleep on average 6.7 hours each weekday, that's a 20% decrease," Carmel said.*

*"So it's like the food story and exercise story. We didn't know how important exercise was until our incidental exercise was taken away due to easy access to cars and transport. We didn't realise how important food was until, with the easy availability of supermarkets and fast food, we started eating too much junk food.*

*"As a result, in both cases, public education campaigns were undertaken to educate us on the importance of good quality exercise and food...now we've cut back on sleep due to technology, 24/7, increasing business demands and globalization of the world and we've given up something that we didn't know was basic to health. There is now a need to educate people on the fundamental importance of sleep to our health and wellbeing, and that food, exercise and sleep are our three pillars of health."*

The presentation of data obtained from the templates was relevant, understood and appreciated, providing the catalyst for informed discussion during the day. The template itself is dynamic and evolving and has been revised to incorporate feedback from forums one and two. While introducing some new elements, the template collects a consistent set of core information that helps build a clear and comprehensive picture of utility fleets

ANCAP 5 Star 2015  
**64%**

ANCAP 5 Star 2016  
**74%**

ANCAP 5 Star 2017  
**85%**

Participants also indicated development and implementation of transport related policies had doubled during the past year and uptake of IVMS/telematics continues to increase in all organisations.

The following slides extracted from presentation material on the day provide an insight into participating fleet profiles.

### Participant Overview — Scene Setting

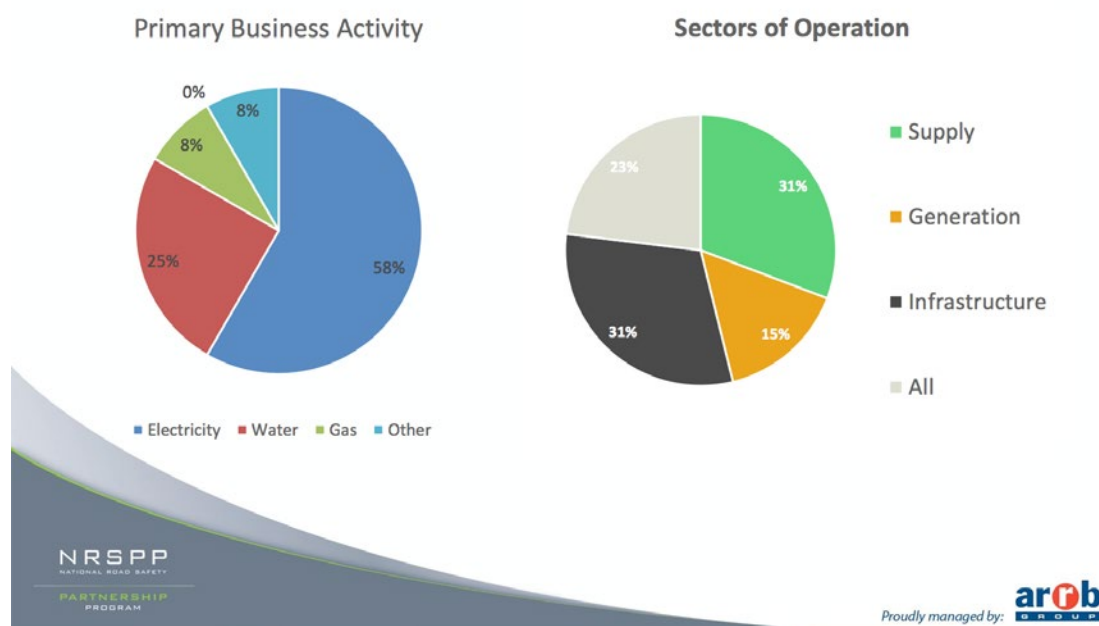


Figure 4 Participant Business Activities

### Ownership model overview

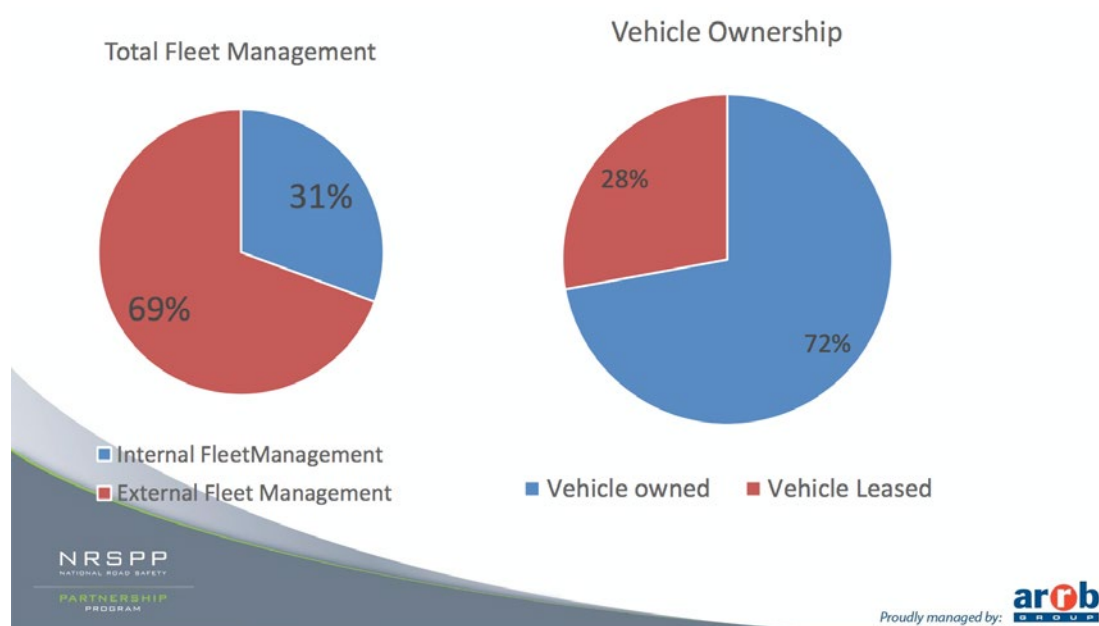


Figure 5 Insource v Outsource models

## Ownership and management model

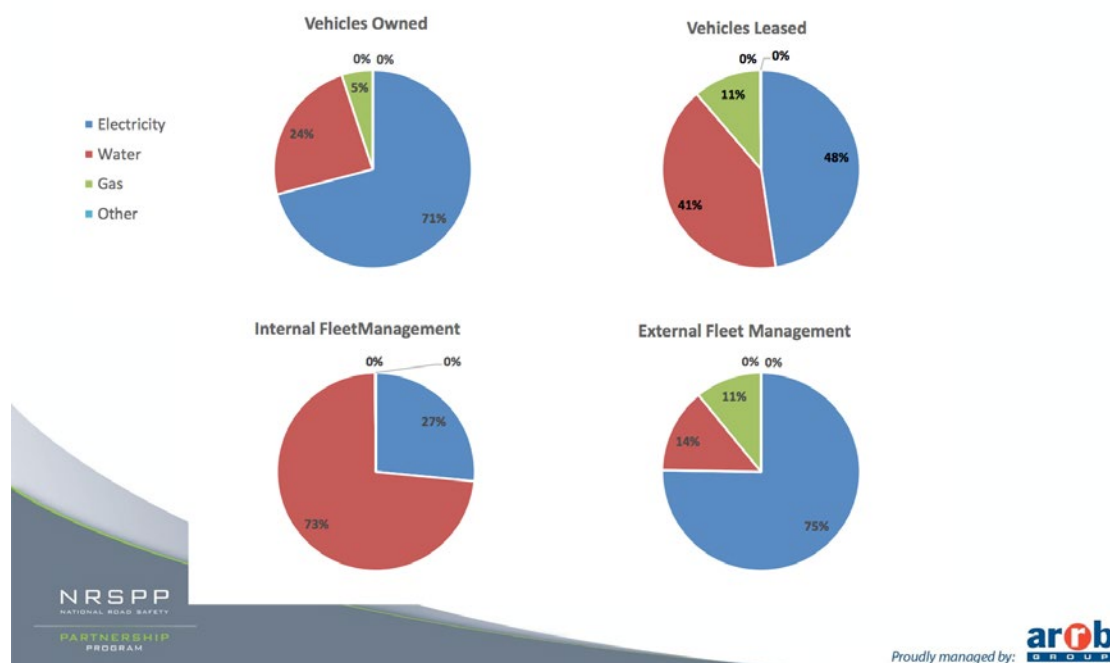


Figure 6 Insource v Outsource by sector

## Technology Profile

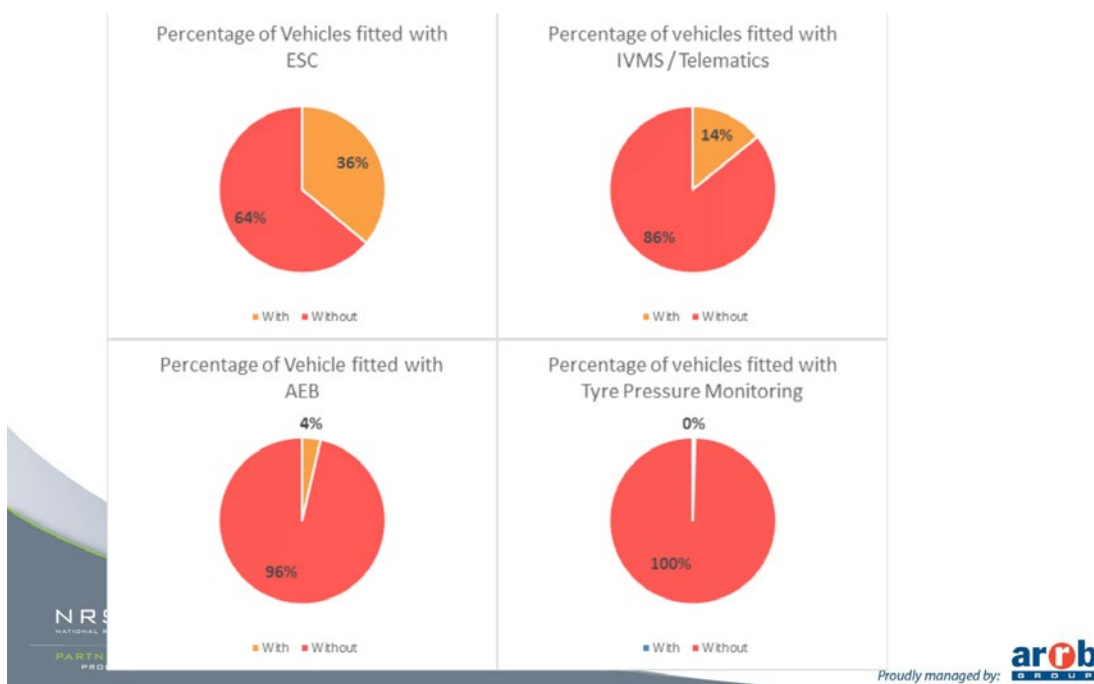
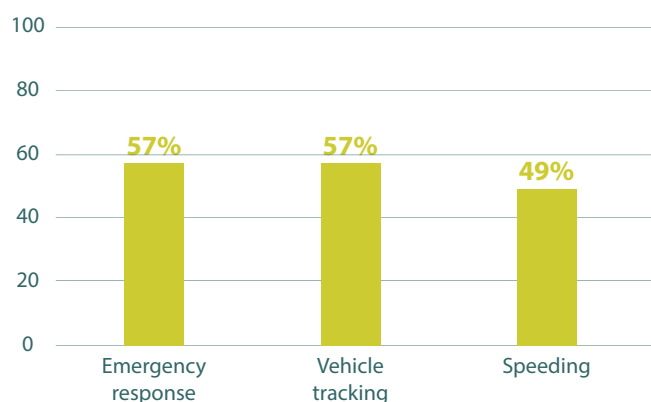


Figure 7 Introduction of Safety Technologies

Data and discussion revealed that new technologies were being implemented throughout fleet, although penetration is limited by the availability of some technologies (e.g. AEB in LCVs) and replacement lifecycles.

### Highest ranked IVMS priorities in 2017:



Template data also revealed a strong fleet emphasis on reporting lead indicators. Data was sought on five lead measures that encapsulated the broad aspects of a mobile work environment:

- Near miss (hazard reporting)
- Vehicle maintenance and breakdown data
- Driver training
- Vehicle compliance with safety standards and specifications
- Journey management plans.

### Lead indicators

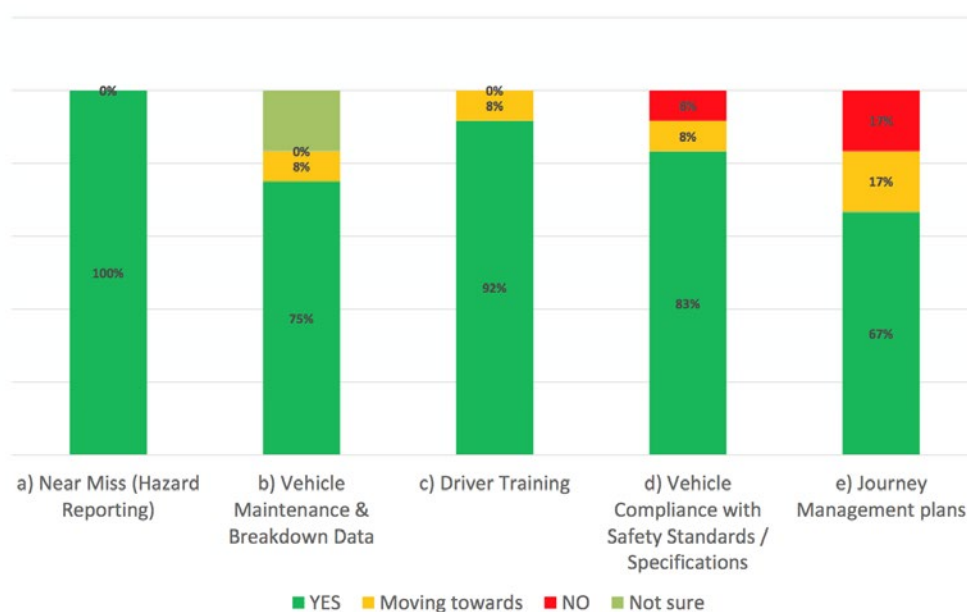


Figure 8 Lead Indicator Implementation



## Lag — Data Capture

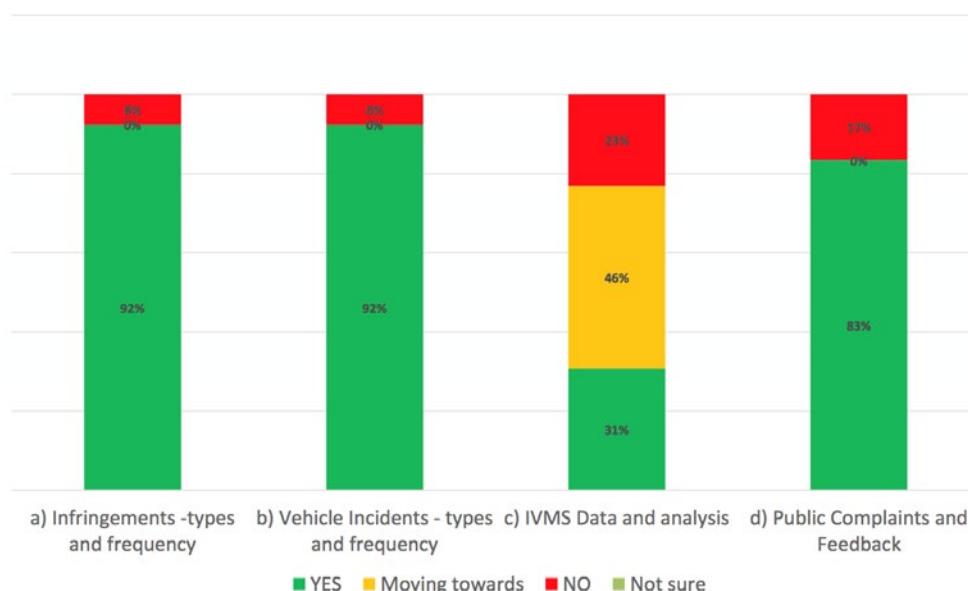


Figure 9 Lag Data Capture

Participants were similarly asked to respond on the capture of lag data. Notably, all participants are not capturing traffic infringement and incident reporting. The IVMS response also highlighted that this is a new segment still being established.

In preparation for the forum's focus on fatigue, the NRSPP request for participant data included fatigue related information and policies. These contributions were analysed before the forum and Jerome Carslake presented the findings on the day. Across all participants, the following commonalities were found (with detailed summary available here at NRSPP):

- Exploration of fatigue as an issue
- Presence of training
- Risk based approaches
- Accountability
- The role of employees and workers
- The role of management, and
- Alcohol and drugs.

While there were substantial commonalities, participant approaches varied significantly in:

- Extent that fatigue is explored (including Just Culture example)
- Extent of training
- Supporting tools and technology
- Distraction
- Monitoring
- Role of contractors and subcontractors
- How fatigue is managed during emergency works or call-outs
- Ease of use and understanding of policies
- How evidence is kept
- Role of organisations
- Accountability in undeveloped policies, and
- How organisations empower employees to manage fatigue.

At the conclusion of the presentation, participants were asked about their strengths in managing fatigue and how could it be improved; comments from the audience included:

- Providing evidence and independent advice from fatigue management experts
- Predictive Fatigue Management, keeping a record of long shifts and night shift patterns to help identify the potential fatigue risk and rest period
- Knowledge of emergency response times and understanding what occurred in lead up
- Monitor fatigue closely to ensure the person is fit for work
- Adopting a multiple people tiered system in shifts and on call
- Approved roster patterns (risk assessment of shifts) – extend chain of responsibility to ensure contractors are covered, and
- Having 12 hours of down time between long shifts.

In a follow-up question, delegates were asked what their organisations could do to empower fatigue management in employees; ideas included:

- Identifying that fatigue happens in the office as well as on site
- Minimising high risk reactive emergency work
- Using regional teams to reduce fatigue due to transportation
- Better asset management practices to reduce emergency maintenance works, and
- Empowering employees to be aware of fatigue and encourage conversations with managers about shift lengths and rotations.



## Group Activity

As a final activity, delegates were asked to work in table groups and generate an ideal fatigue management plan, drawing on the information in the presentation as well as discussion of current industry practices. The ideal program activity allowed participants to collaboratively generate a fatigue management plan and voice their opinion on what should be included.

Table 1 provides a summary of the common elements that were identified in ideal fatigue management programs across six groups.

Element	Description
Education in fatigue	To provide education in the form of e-learning, workshops and presentations on fatigue and the negative impacts of fatigue. This will allow all staff to have a better understanding of fatigue.
Lead by example	Management to lead organisation habits and routines to reduce tasks that lead to fatigue. Examples: <ul style="list-style-type: none"> <li>• Avoiding sending emails in the early hours of morning</li> <li>• Sleep gamification to create awareness.</li> </ul>
Self-assessment and awareness	Better understanding of shift length and awareness of capacity limitation to avoid overworking and fatigue.
Empower an organisation culture	Empowering staff to stop work when feeling fatigued or tired. Having a supportive organisation culture that identifies and rewards staff displaying the right behaviour and attitudes towards fatigue management.
Work life balance	Understand lifestyle choices impact on fatigue management choices such as diet, exercise and sleeping hours. Evaluate whether rest time is allocated adequately for actual resting and sleep.
No single approach or 'silver bullet'	Understanding there is no single approach that will manage fatigue in the workplace. It is a combination of approaches and countermeasures to actively promote fatigue management from top to bottom of an organisation.

Table 2: Common elements in an ideal fatigue management plan

## Participant Feedback

At the conclusion of the forum, participants were asked to provide feedback on the event. A short questionnaire, covering aspects of the profile template, workshop format, content and delivery, was provided. Some questions invited a simple scored response (1-5), others a brief commentary.

The feedback received was positive and constructive. Participants strongly endorsed the content and format of the event and expressed interest in attending future forums.

### **Presentations:**

- The highest ranked sessions were importance of sleep and fatigue analysis, then vehicle safety.

### **Opportunities for improvement for next time:**

- It was a full agenda and delegate interaction was very good, however this resulted in sessions running beyond time. Constructive feedback captured this as a need to improve timekeeping or reduce the number of topics. One comment suggesting 1½ days would have been better.
- It was a large venue and presentations/ interactive discussions didn't use a microphone. Feedback noted that some couldn't hear the conversations well or read the presentations properly.
- The face-to-face benefit of the forum was captured by comment that more networking opportunities are needed.
- The data captured in the templates was comprehensive and not all was presented on the day. Feedback asked what was omitted?

### **What else respondents want to see next year:**

- CoR – servicing risk factor
- IVMS – key points for success
- More telematics analysis and at a higher level
- More historical data comparisons (with three full years of data, this will be valuable)
- ANCAP vs Euro NCAP
- Understanding the new 5 star ANCAP standard

### **What respondents would have added to the template:**

- Level of incidents
- People impacts
- Euro NCAP

### **Potential 2018 attendance:**

- All said yes, expect one who was unsure

### **Other comments to note:**

- The forums continue to improve
- It was facilitated well



Follow up feedback of the forum included an NRSPP interview – Blog – The Utility of Fatigue Affects Us All. An extract is included below:

*For Andrew Murphy, from Energy Queensland (which includes Ergon Network and Energex), the Utilities Forum provided an opportunity to network with organisations working in similar areas and to compare his own organisation's progress.*

*Andrew described the discussion about how sleep influenced fatigue as an 'eye opener'. He believes Energy Queensland manages fatigue well, particular for its field workforce, but transferring that to the executive pool and building understanding about sleep's role in fatigue were challenges.*

*Energy Queensland has a fatigue calculator that gives its 3000+ field workforce an indication of their level of fatigue and Andrew is interested in exploring how fatigue influences driving behaviour and the role technology plays in managing fatigue.*

*"The most valuable thing I get out of the forum is talking to other people who are having the same issues we are and working together on what they've done and what we're going to do to improve that issue," Andrew said.*

*"Certainly the fatigue information was a bit of an eye-opener. I think we manage fatigue very well for blue collar operators and in particular in a major event like a cyclone or flood, we excel in that for field staff, but I think we need to educate more about sleep.*

*"It's ok to manage your work environment and manage how long you're on the job but actually managing sleep outside that time and educating individuals about their own fatigue."*

*Brad Towns, from SA Water, had similar views, suggesting networking and sharing knowledge among similar organisations was the key forum outcome. In particular, he found information about how other utilities were utilising In Vehicle Monitoring Systems (IVMS) helpful.*

*He believes SA Water also manages fatigue well, particularly in emergency situations. Building on fatigue training already delivered, by incorporating an understanding of how sleep affects fatigue, and introducing an app to help field staff manage fatigue were next on the agenda. Managing differing fleet categories was another workplace road safety issue for SA Water.*

*"We're in the planning/implementation stage with IVMS, what we want to work out is how and what we want to collect and report on and I got some great information from other organisations on what they've done," Brad said.*

*"I'm also still unpacking the discussion around the link between fatigue and distraction and how that impacts businesses. I had a discussion with another partner in a networking situation and the penny dropped for me, looking at fatigue and distraction.*

***"If we look at how the brain reacts to fatigue, our brain is a box to process everything. When we get fatigued, that box gets smaller, requiring the brain to shed information input."***

*"When you're driving, it becomes harder to focus on what you're doing, peripheral vision and focus narrows as fatigue sets in. Then throw in the phone ringing and our brain finds it hard to process all the information inputs and needs to give something up to process the phone call. That's the key link between fatigue and distraction. They're issues I'd like to explore further."*

**For further information,  
please refer to [nrspp.org.au](https://nrspp.org.au)**