



Safer Roads to Address Fatigue Crashes for NSW

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ARSC Rural Road Safety Workshop, Oct 2025



VIASTRADA
TRANSPORT PLANNING AND DESIGN

Background context

2016 project for Transport for NSW

- TfNSW sought to develop a case for a \$100m+ investment in road infrastructure to target fatigue crashes in NSW
- ViaStrada asked to prepare a **presentation & fact-sheet** for this
 - Crash data showing severity of the problem
 - What we are currently doing to address the problems using each of the four Safe System pillars
 - Proposed infrastructure mass-action treatments
 - Estimated costs and benefits at a program level



Acknowledge Melvin Eveleigh & Joseph Le (TfNSW) for their support!

Fatigue-Related Crashes: Key Factors

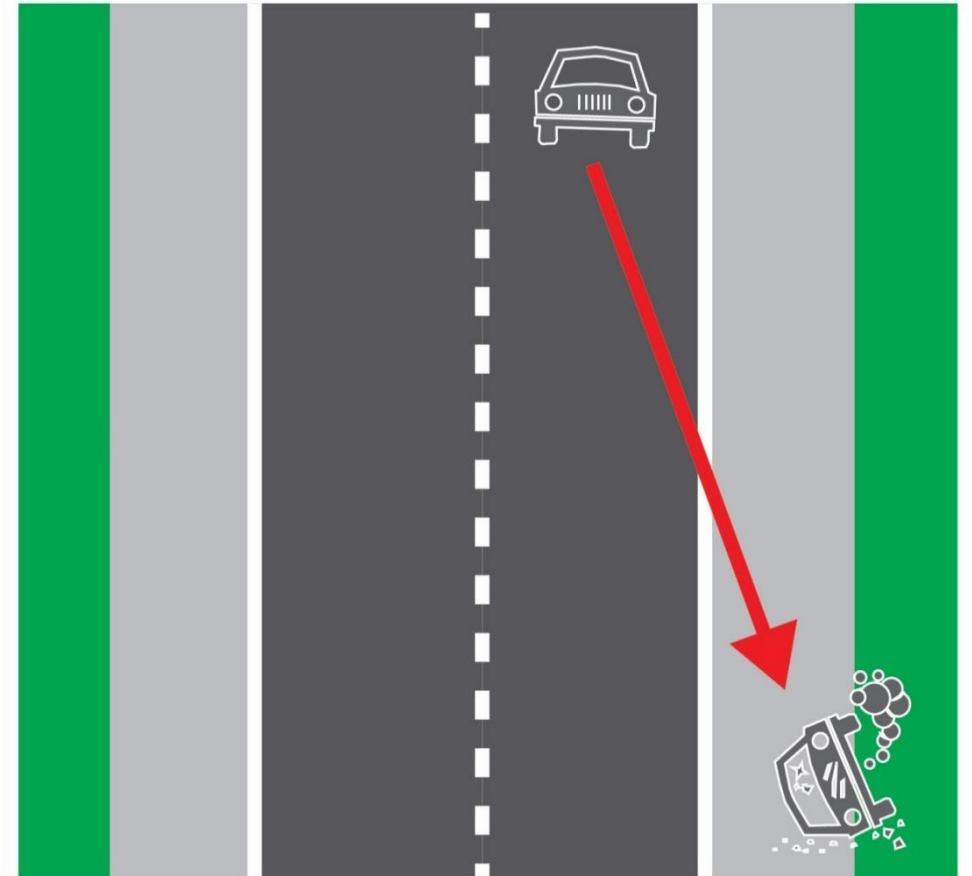


Fatigue-Related Crashes

A subtle road safety problem

2 seconds is all it takes at 100km/h...

- Run off Road (ROR)

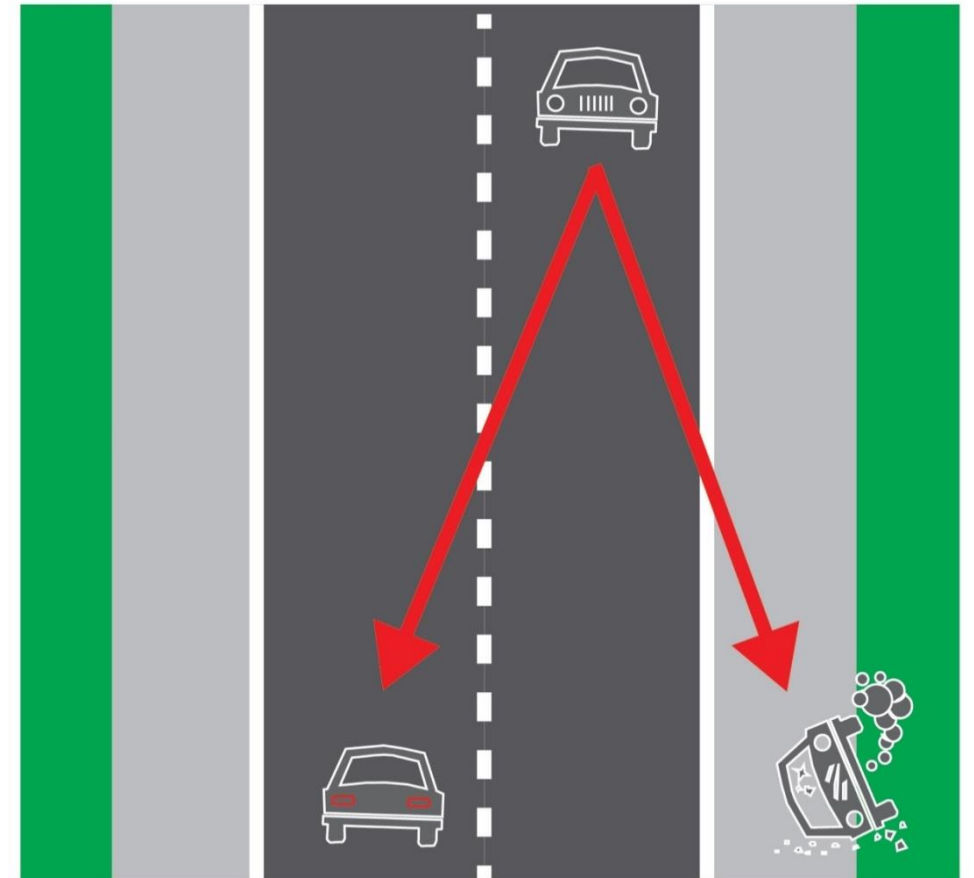


Fatigue-Related Crashes

A subtle road safety problem

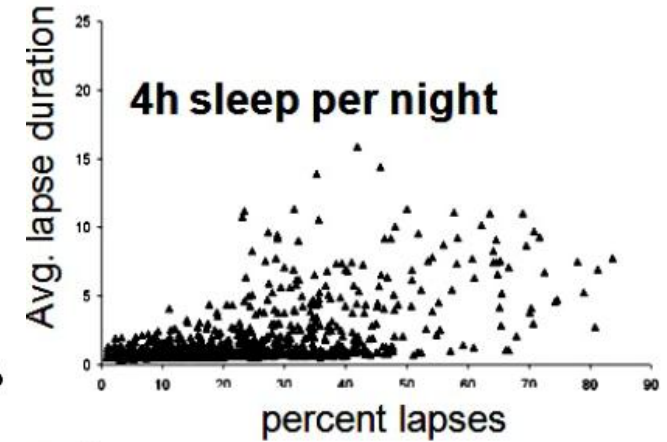
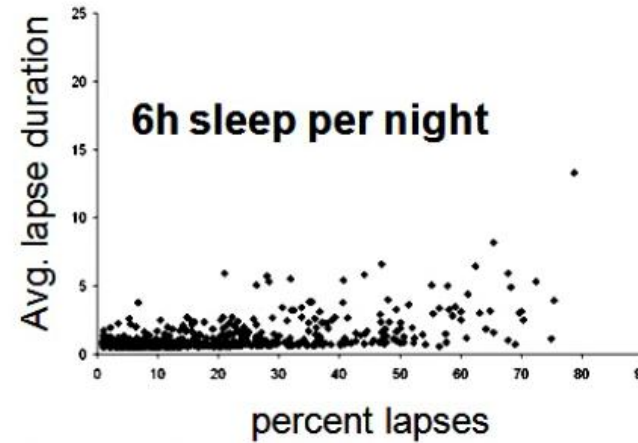
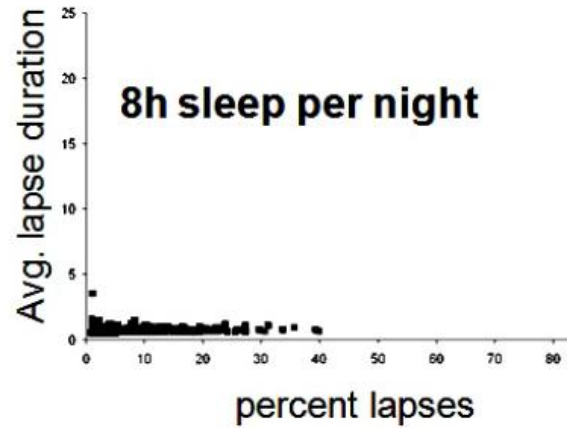
2 seconds is all it takes at 100km/h...

- Run off Road (ROR)
- Head-On (HO) crashes



Not just about “falling asleep”...

- Before actually falling asleep, fatigue causes *lapses*



- Less sleep:
 - More lapses
 - Longer lapses

Sleep Deprivation vs Alcohol



18 hours awake



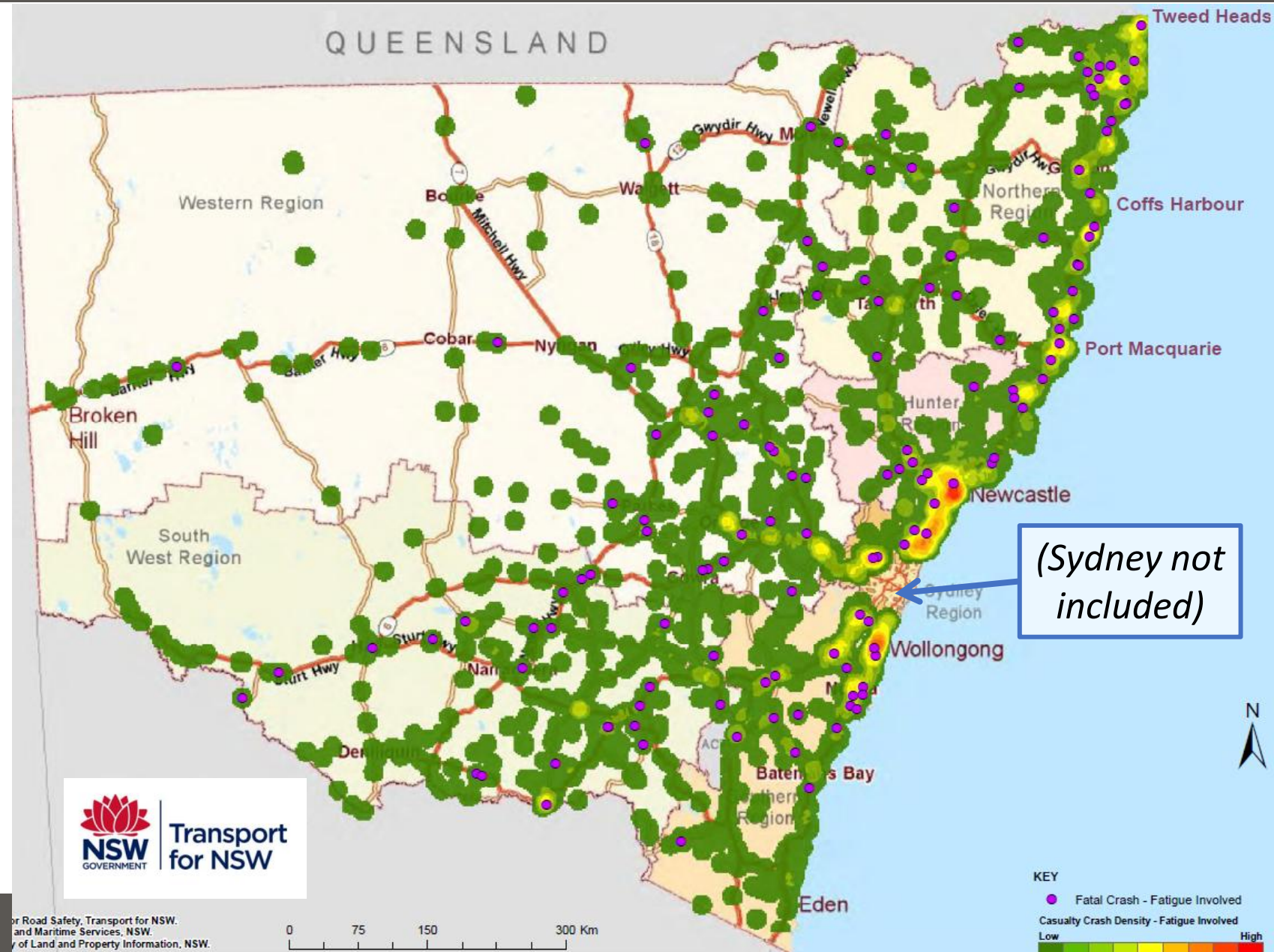
0.05% blood alcohol
concentration



Fatigue – a State-Wide Problem

- Density of fatigue-related casualty crashes 2013-2015

Note: not just a rural problem either – common in urban centres too...

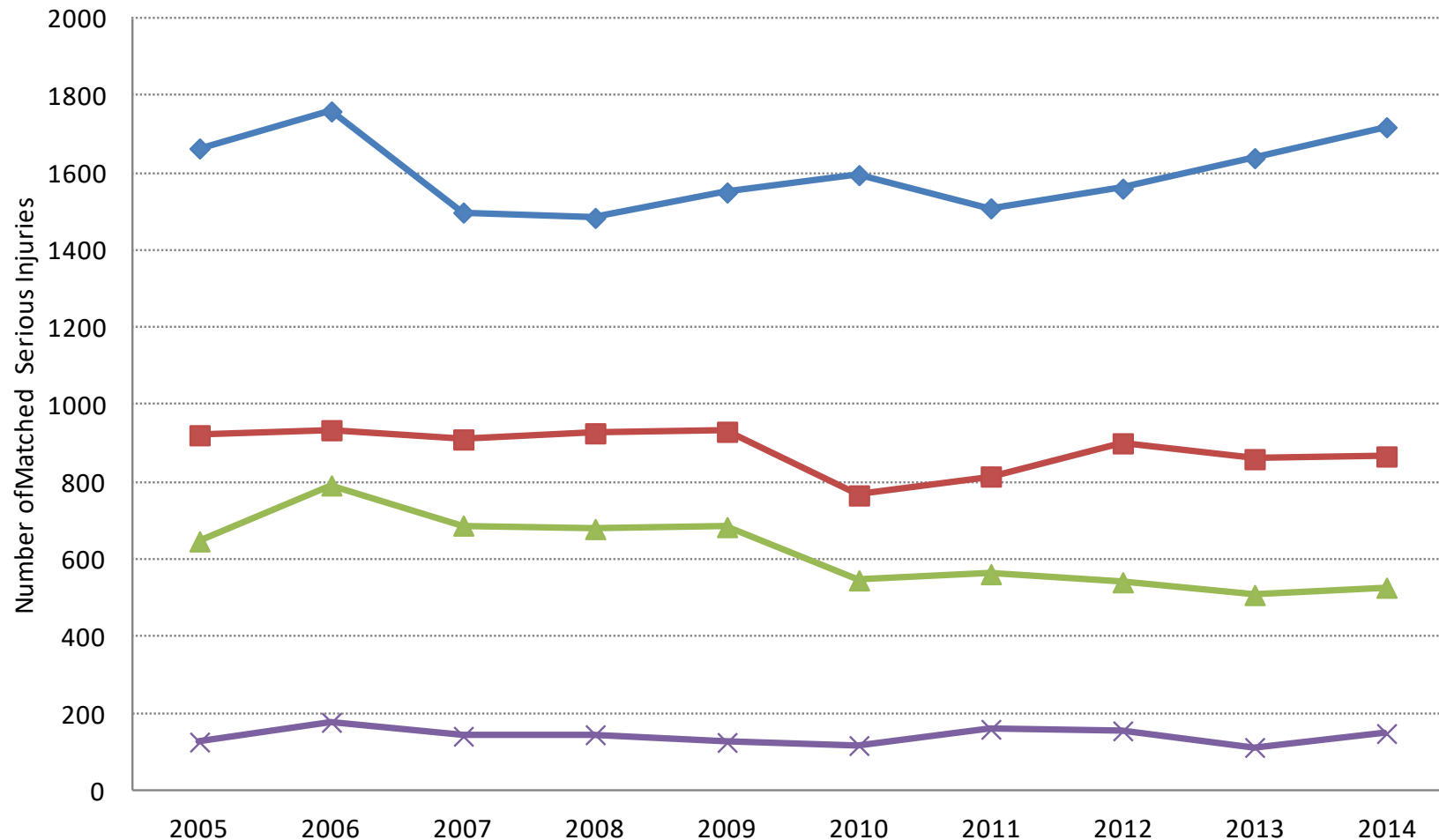


Prevalence of Fatigue Crashes

Serious Injuries (Matched Data Only),
NSW, 2005 to 2014, Reporting Year, Behaviour Factors



Transport
for NSW



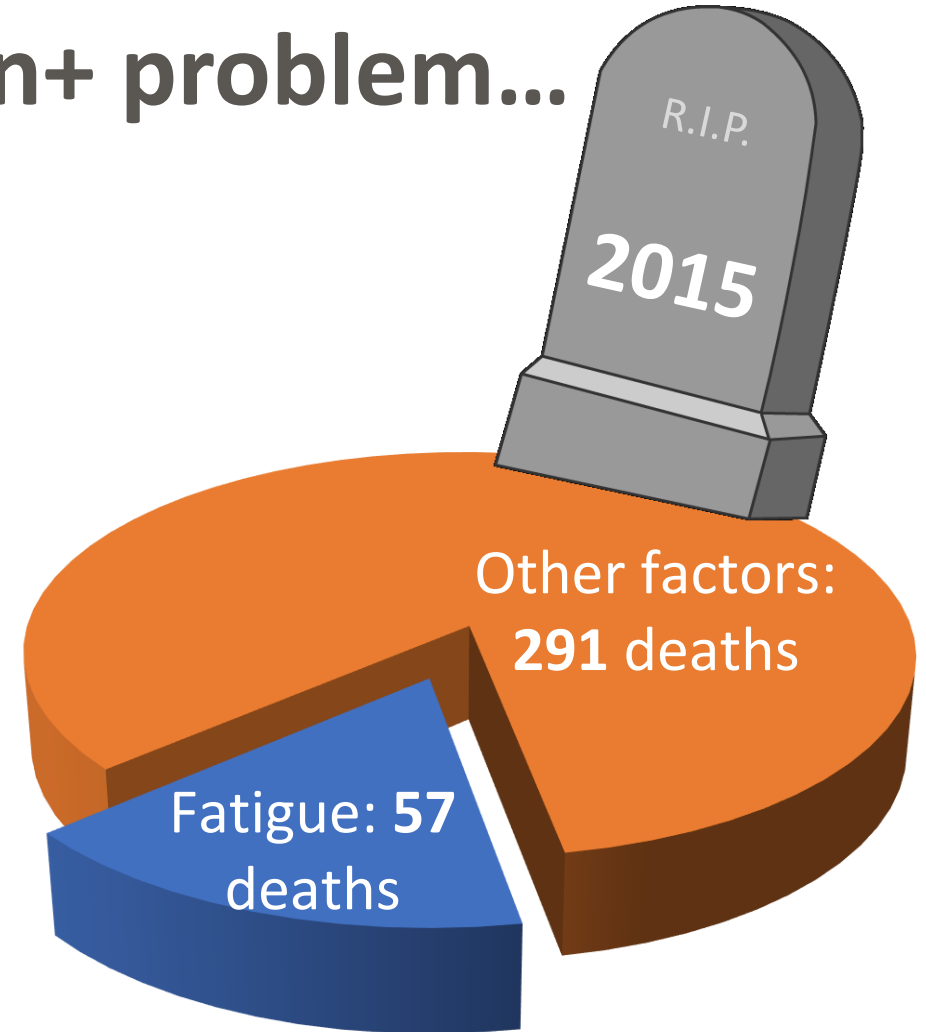
*Do we
spend
enough
targeting
this?*

Road Safety Context

Road safety in NSW is a \$3 billion+ problem...

(Estimated social cost of injury/fatal crashes)

- Fatigue crashes make up a large proportion of this



Summarising the problem

A “sleeping” issue?

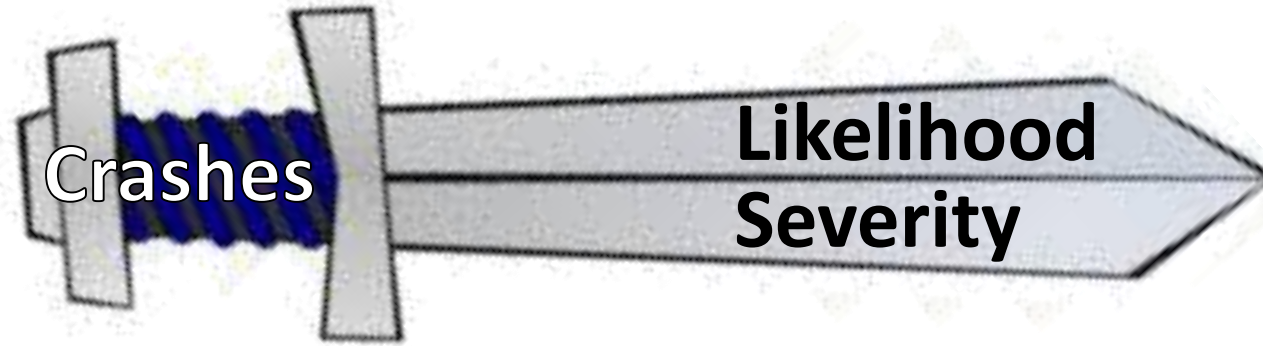
- Driving while fatigued is a problem
 - Similar effects to alcohol
 - Causes a significant number of crashes

We're not doing enough about it



Addressing Fatigue Crashes

Theory behind crashes:



*Whether crashes
actually **happen***

***Consequences of
crashes that do occur***

Addressing Fatigue Crashes

Safe Systems...



Safe System Approach



Treating the four Safe System pillars...

	Reduce LIKELIHOOD of fatigue crashes	Reduce SEVERITY of fatigue crashes
Safer PEOPLE		
Safer SPEEDS		
Safer VEHICLES		
Safer ROADS		

Safer PEOPLE and SPEEDS



Road users are a predominant factor...

	Reduce LIKELIHOOD of fatigue crashes	Reduce SEVERITY of fatigue crashes
Safer PEOPLE	Promote regular breaks	Seatbelt wearing
Safer SPEEDS	Speed enforcement	Lower speed zones
Safer VEHICLES		
Safer ROADS		

Safer PEOPLE and SPEEDS

Shouldn't we just focus on drivers?

- We are addressing this
 - e.g. Education / Enforcement
- Requires on-going input/commitment
 - Otherwise behaviours slip back
- People still make mistakes
 - We're only human!



Balanced Safe System Approach

Safer VEHICLES



A lot of technology being developed...

	Reduce LIKELIHOOD of fatigue crashes	Reduce SEVERITY of fatigue crashes
Safer PEOPLE	Promote regular breaks	Seatbelt wearing
Safer SPEEDS	Speed enforcement	Lower speed zones
Safer VEHICLES	Fatigue detection Collision avoidance / lane departure	Airbags Crumple zones
Safer ROADS		

Safer VEHICLES



Perfect autonomous vehicles? →

- Probably still years away
- Likely won't cover entire fleet

Safer ROADS



Key focus of today's presentation...

	Reduce LIKELIHOOD of fatigue crashes	Reduce SEVERITY of fatigue crashes
Safer PEOPLE	Promote regular breaks	Seatbelt wearing
Safer SPEEDS	Speed enforcement	Lower speed zones
Safer VEHICLES	Fatigue detection Collision avoidance	Airbags Crumple zones
Safer ROADS	Tactile line-markings New rest areas	Crash barriers Clear zones

Safer ROADS



Fatigue awareness signs



Rest areas



Profiled line markings



Sealed shoulders



Safety barriers

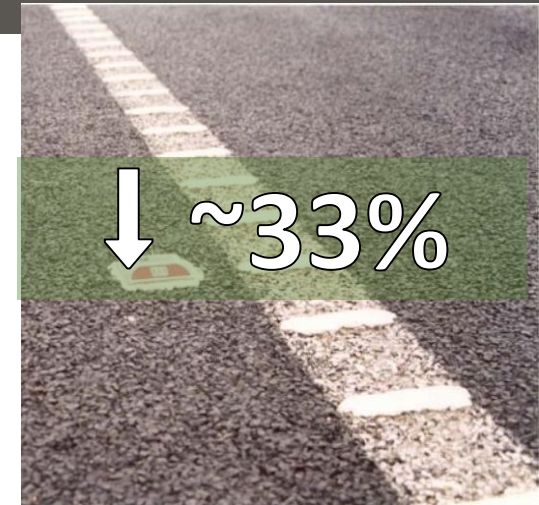
Safer ROADS – Crash Reduction



Fatigue awareness signs



Rest areas



Profiled line markings



Sealed shoulders



Safety barriers

Safer ROADS – Total Cost ~\$100M / 5 yrs



Fatigue awareness signs



Rest areas



Profiled line markings



Sealed shoulders

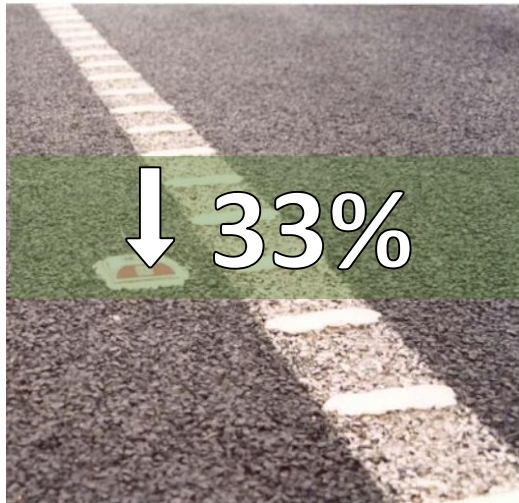


Safety barriers

Example Cost-Effectiveness

Install PLMs across *entire* NSW rural network

- Benefit / Cost Ratio for profiled line markings only:



750M crash savings



131M installation

= 5.7

*In this case, we want to apply **multiple** treatments across NSW*

- Aim to use treatments with BCRs $\geq 2:1$...*

To sum up... Fatigue

Proposing a \$100M+ program of safer roads

- Over 5 years
- Suite of multiple eng. treatments
- BCR >> 2

affects drivers in similar ways to **alcohol**,



causing them to be

inattentive and slower to react.



Nearly **60** lives are lost

each year due to drowsy driving.

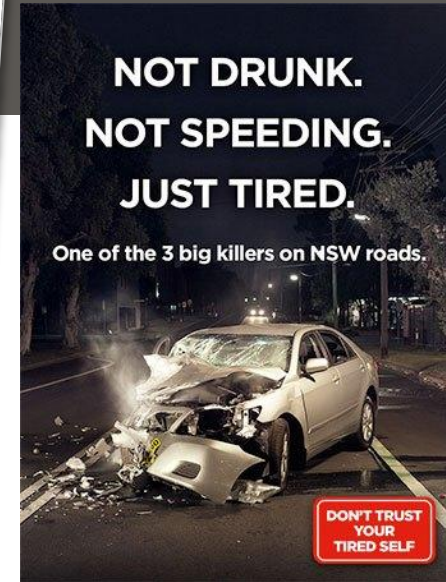
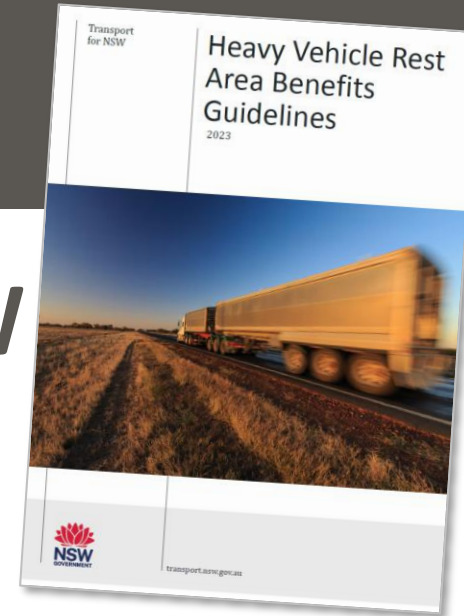


Profiled line markings can reduce this!

Postscript...

Fatigue mass-action funding in NSW

- Fatigue management was addressed through a larger investment in a range of road safety programs since 2016
 - NSW Safer Roads Program
 - **Saving Lives on Country Roads** Initiative



Rest is best for Easter travel in the west

Published 14 Apr 2022

14 April 2022

Motorists hitting the road this Easter are reminded to plan regular breaks to combat driver fatigue, one of the biggest killers on our roads, particularly across the vast region which covers about 60 per cent of the state.

Transport for NSW data shows that in five years to 2020, driver fatigue was a significant factor in 805 casualty crashes across the western region with 82 fatalities and 444 people seriously injured.

"There's nothing better than getting out on the open road to explore our state's highways and byways but your safety, and your family's safety, must always be the top priority," Transport for NSW A/Director West Paul Polansky said.

"When you're taking a road trip, the time you spend resting is just as important as the time you spend behind the wheel. Road safety experts recommend taking a break every two hours to refresh.

Rumble strip installation - New safety measures for NSW Highways

Reviewed 23 Oct 2024

The NSW Government has committed \$46 million over the next three years to install rumble strips and enhance line markings on key regional routes. More than 2700 kilometres of rumble strips – the equivalent of driving from Sydney to Adelaide and back again – will be installed along regional NSW highways to combat driver fatigue and save lives on country roads.

The 2018-19 SLCR Program delivered route based projects, including the installation of wide centreline on the New England Highway between Uralla and Armidale, and commencing the installation of median barrier on the Mitchell Highway between Bathurst and Orange.

During 2018-19, 199 projects were under construction with 123 completed under the SLCR program.

In 2018-19 this included installing 113 kilometres of safety barriers, 3,000 kilometres of rumble strips (audio tactile line marking – ATLM) and 22 kilometres of motorcycle under run to prevent run off road and head on crashes.

Thank You for Your Time!

Any questions?

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John died
in his sleep.
He was warm,
comfortable
and doing
70 mph on
the motorway.

Don't drive tired. **THINK**