Does Local Government Want to Make Road Safety a Priority? (What Can Help Unlock the Potential in Your Road Infrastructure?

David McTiernan, National Leader Transport Safety

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Introduction and Overview

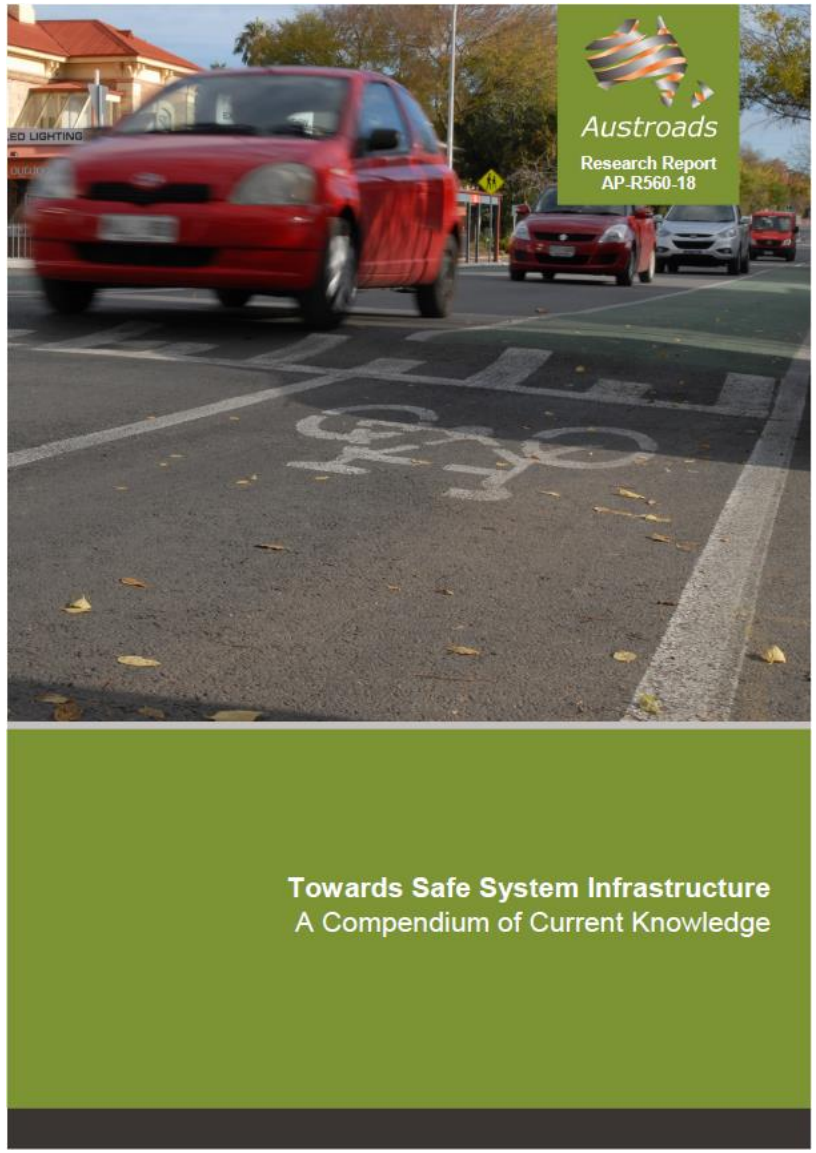
- Is road safety a local government priority?
- Road safety approach - Then vs. Now
- Case studies
- What needs to happen?
- Top 5 take aways

Is Road Safety a Local Government Priority?

Key observations…

- Councils are the road authority for local roads
- Crashes occur on local roads every day
- Local government road safety…
  - Under-resourced
  - Under-funded
  - Lack necessary skills and expertise
  - Lack a whole of organisation approach and integration
  - Applies an outdated approach to road safety
- State and Federal Government road safety models
  - Funding relevance
  - Lacking engagement
  - Leadership in policy setting

Best Practice or Standard Practice?



Fundamentally for planners, designers and traffic managers, the task will be to **adopt a systemic approach** to build a safe road system focusing on core injury mechanisms.

Safety needs to be the **default position** from which variations are justified as opposed to many current practices that lead to the need to justify changes to 'add on' safety.

Then vs Now

	Conventional	Safe System
What is the problem?	Accidents	Fatalities and Serious Injuries
What causes the problem?	Mainly poor road user performance Speeding, drink driving, inattention, deliberate risk taking	System failures
Who is ultimately responsible?	Individual road users	System designers and operators
What is the major planning approach?	Incremental approach to reduce the problem with an associated residual crash problem	A systemic approach to build a safe road system and minimise the harm
What is the appropriate goal?	Optimum number of fatalities and serious injuries based on competing objectives	Towards the virtual elimination of death and serious injuries
What is the trade-off?	A balance between mobility and safety	Maximising safe mobility
How is the effort coordinated?	Incremental gain within individual pillars (roads / speeds / vehicles / people)	Optimise solutions across pillars (roads / speeds / vehicles / people) – pillars compensate for each other where performance is poor
What are the cultural manifestations?	Legal liability avoidance and risk aversion	Risk assessment, innovation, trials and demonstrations
Context of tools in use	Bias towards pre-existing crash history, understanding crash causes and likelihood, optimising the network for motor vehicles	Risk analysis based on network design attributes supplemented by crash data, understanding crash consequence, optimising the network for all road users and human frailty

CASE STUDY 1
Managing risk

Typical vs. Conditioned vs. ‘Standard’ vs. Innovation

Design feature	Existing (typical) (A)	Condition of consent	Austroads		Haul route
			Standard x-section	WCLT	
CLT width, (m)	0.1 – 0.3				
Lane width (m) (x2)	3.1 - 3.4				
Seal shld. (m) (x2)	0.5 – 1.5				
Shld. width (m) (x2)	< 0.8				
Unseal shld. (x2)	< 0.5				
Total seal width (m)	~ 8.4				
Total form. width (m)	< 9.4				

+ minimum 3.0 m clear zone

Case Study 1 – Predictive Risk Management Approach

Before

1 Star iRAP

After

3 Star iRAP

Case Study 1 – Predictive Risk Management Approach

Before

1 Star iRAP

After

3 Star iRAP

Case Study 1 – Then versus Now Review

The approach by the Developer…

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CASE STUDY 2
Crash response

Case Study 2 – The Road

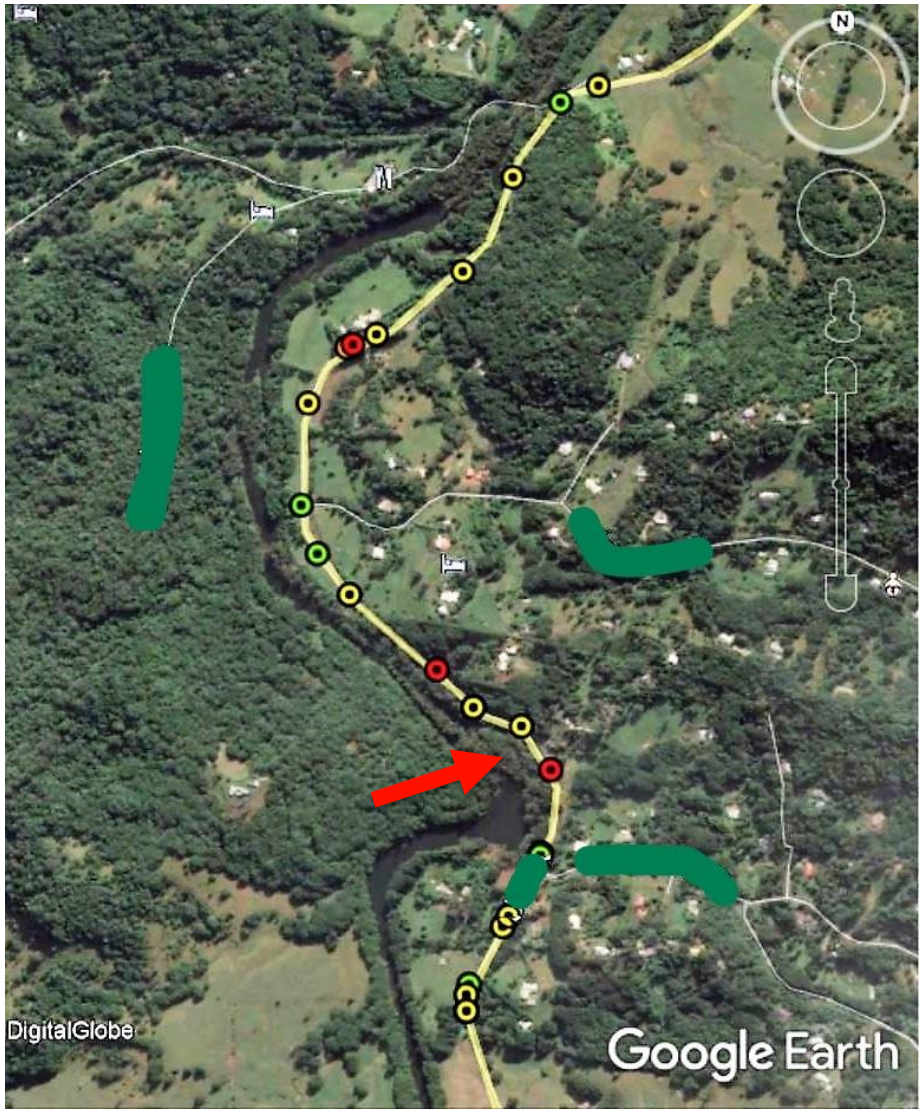
Case Study 2 – The Crash

What was Known?…

In the case of this section of XXXX Road, despite anecdotal evidence of repeated non-casualty crashes, there were few official crash statistics at this location prior to the two fatal crashes.

Source: Council file note

Case Study 2 – Was There a Problem?



5-year crash history (2011 – 2015)

- 22 crashes
- 15 single vehicle
- 4 head-on
- 19 FSI crashes
- Casualty crash rate >1.5/km/year

Source: State Government's online crash database

The Council Approach

Council has not pursued guardrail at this location in isolation as it does not address these root causes of the crashes at this location. If Council does not address the factors leading to loss of control on the corner, which it considers to be mainly speed related, Council will potentially be faced with a maintenance issue from vehicles impacting with the guardrail, and new hazards the guardrail may create. While guardrail may prevent vehicles from leaving the roadway, it would potentially hold vehicles in the path of oncoming vehicles, as occurred in the 2015 fatal crash.

Source: Council file note

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Source: Council file note

The Council Approach

Council officers are already well advanced in seeking Blackspot funding for road improvement projects on XXXX Road, and that this remained the preferred course of action.

Source: Council file note

Case Study 2 – Black Spot Funding

Before

1 Star iRAP

After (~95% completed)

2 Star iRAP

Case Study 2 – Black Spot Funding

Upgrade completed (2+ Star iRAP)

- Upgraded road section
- Steel w-beam guardrail
- Motorcycle under-run barrier
- Improved road shoulders
- Road drainage
- New surfacing

- 3 Star iRAP is possible

Case Study 2 – Then versus Now Review

The approach applied by the Council…

	Conventional	Safe System
What is the problem?	Accidents ✓	Fatalities and Serious Injuries
What causes the problem?	Mainly poor road user performance Speeding, drink driving, inattention, deliberate risk taking ✓	System failures
Who is ultimately responsible?	Individual road users ✓	System designers and operators
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Unlocking the potential (safety) in your road infrastructure

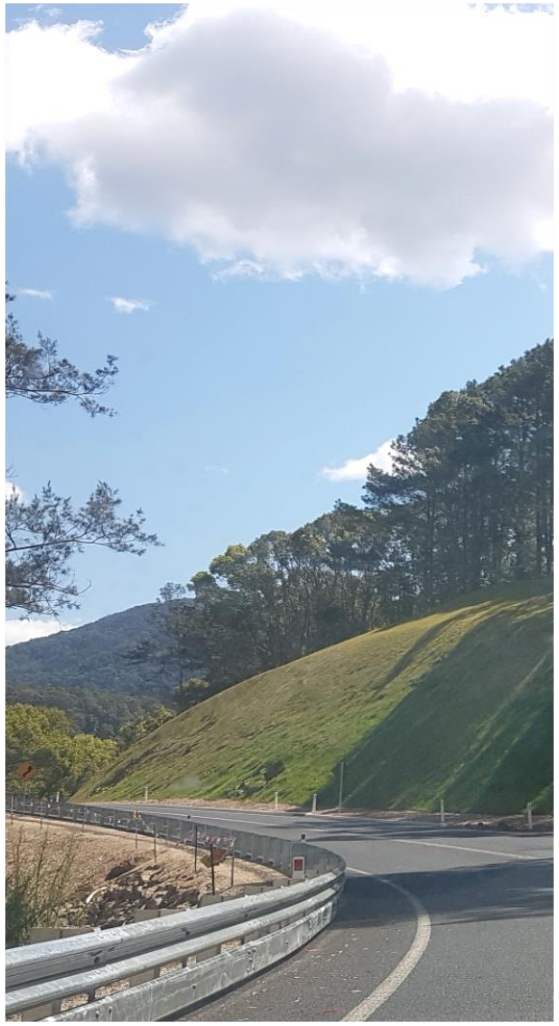
YOUR NATIONAL TRANSPORT RESEARCH ORGANISATION

What Needs to Happen…?

…And why hasn't it yet?

- Local government approach toward road safety needs to shift
  - Road safety as a default position
  - Accept responsibility
  - Whole of council commitment
  - Adopt a systemic approach
  - Measure and report road safety performance
  - Be innovative in solutions

- Professional development
  - Training
  - Technical guidelines
  - Adopt and apply available tools

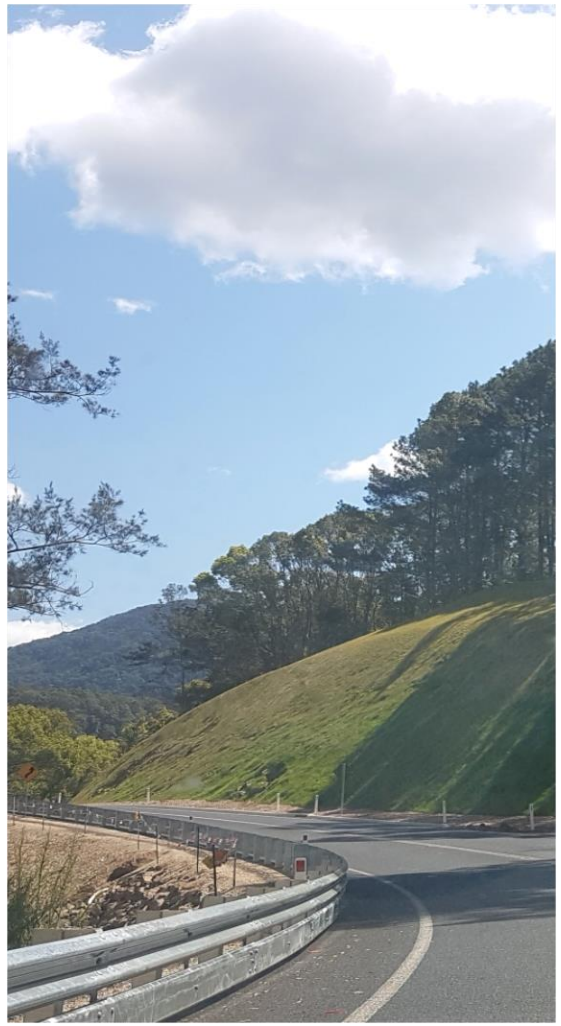


What Needs to Happen…?

…And why hasn't it yet?

- State and Federal government
  - Legislative change
  - Improved and targeted funding models
  - Engagement with councils and local government issues

- Road safety – what's it about?
  - People…the road users, community, friends and family



Top Five Take-aways

Unlocking the potential (safety) in your road infrastructure

- Stay current
- Know your network
- Engage
- Innovate
- Attitude

SHAPING
OUR
TRANSPORT
FUTURE

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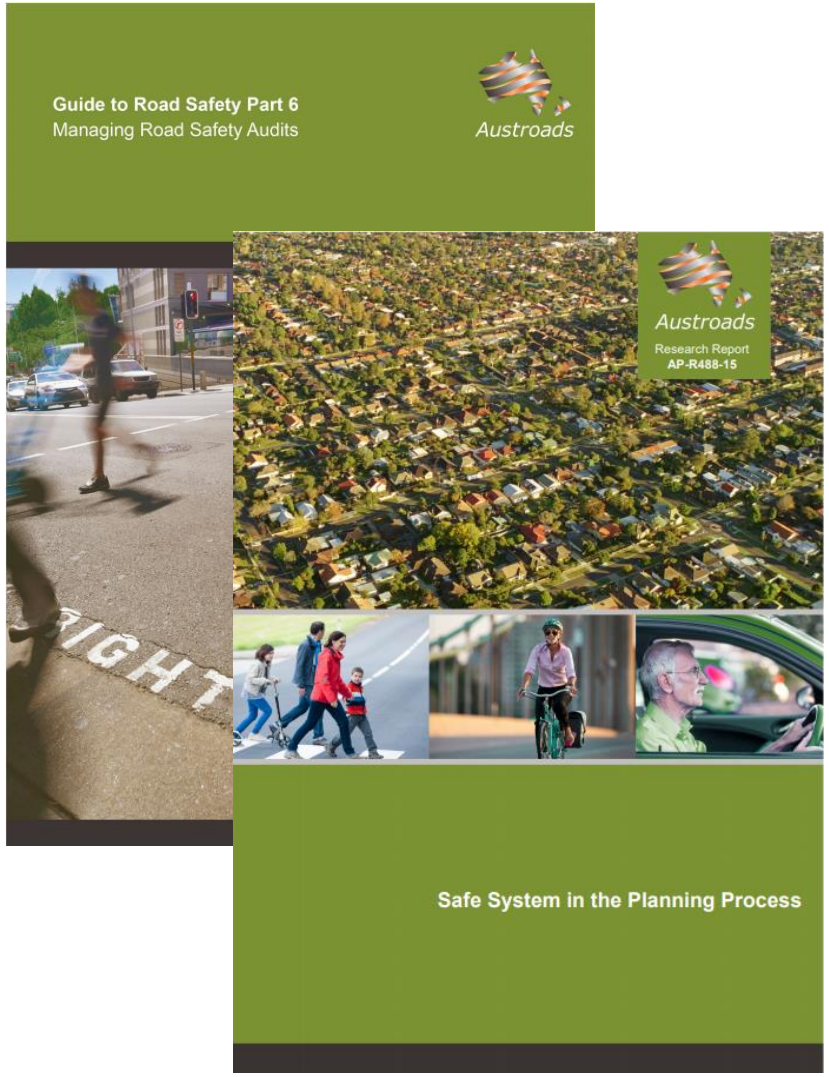
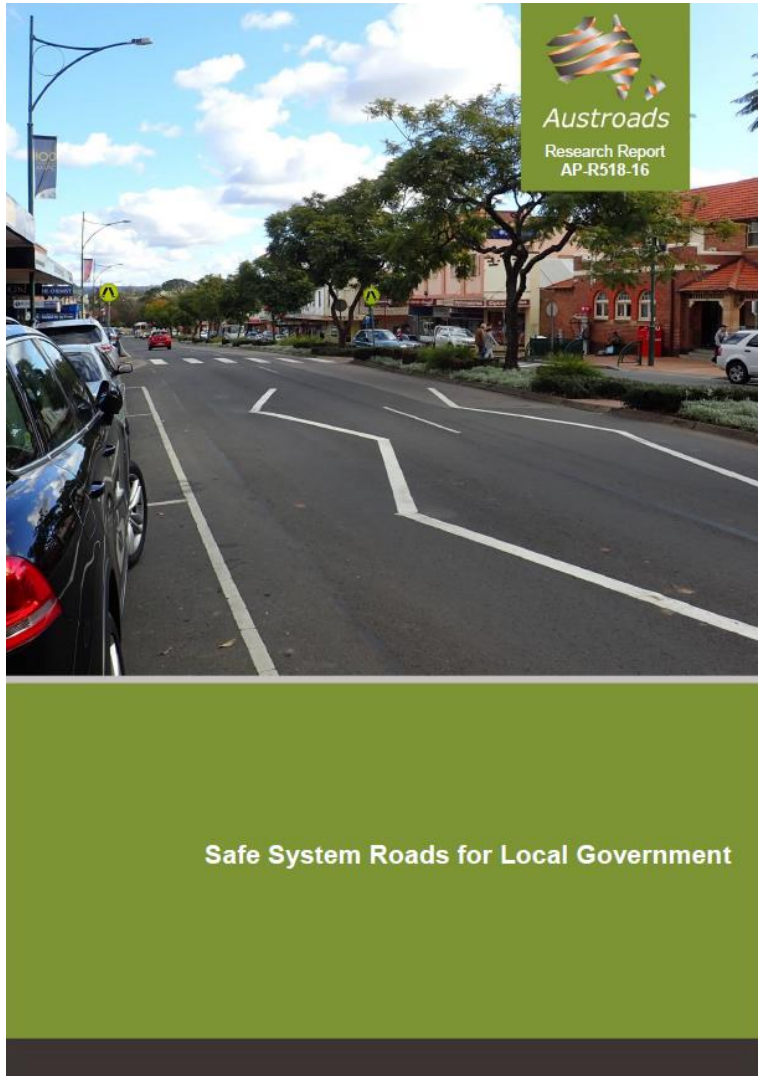
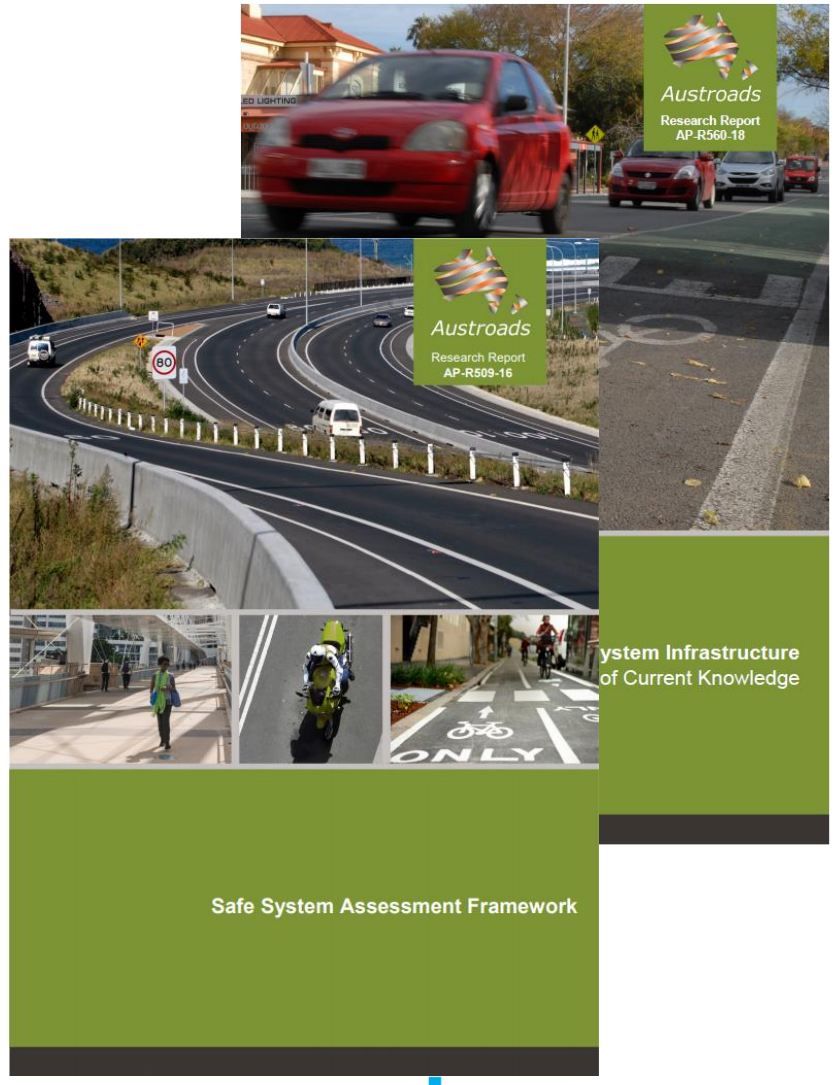
Tools to Unlock the (Safety) Potential

Research and guidance materials







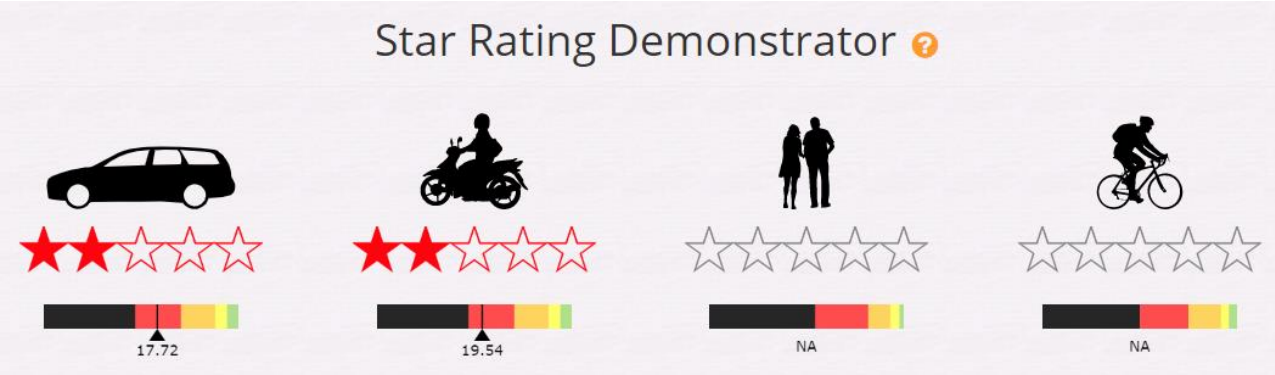
Tools to Unlock the (Safety) Potential

Predictive risk assessment approach

- iRAP/AusRAP
  - A world free of high-risk roads 3-Star or better for all road users
  - ViDA
  - Demonstrator
  - Performance tracking and Risk Mapping
  - Star Rating for Designs
  - Star Rating for Schools
- Safe System Assessment Framework
- Safe System Hierarchy of Control
- Stereotypical cross-sections
  - TfNSW 6R – 1R
  - Austroads

iRAP Star Rating Demonstrator

Stereo typical road layouts



Case Study 2 – A Risk Assessmemt