Australian Government
Office of Road Safety

AUSTRALASIAN COLLEGE OF ROAD SAFETY

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Network Risk Assessments for Local Government

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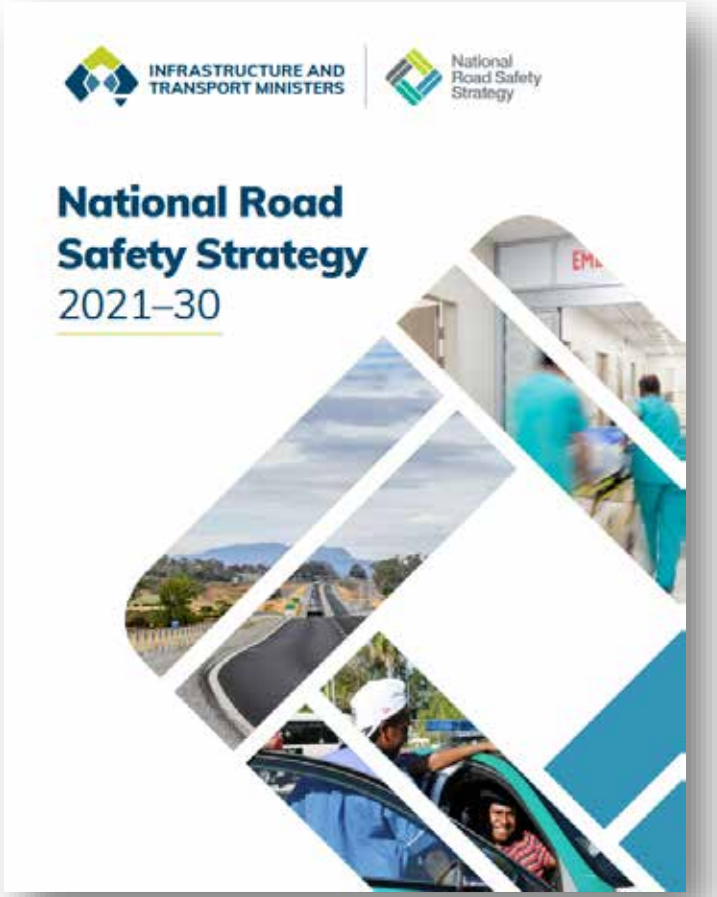
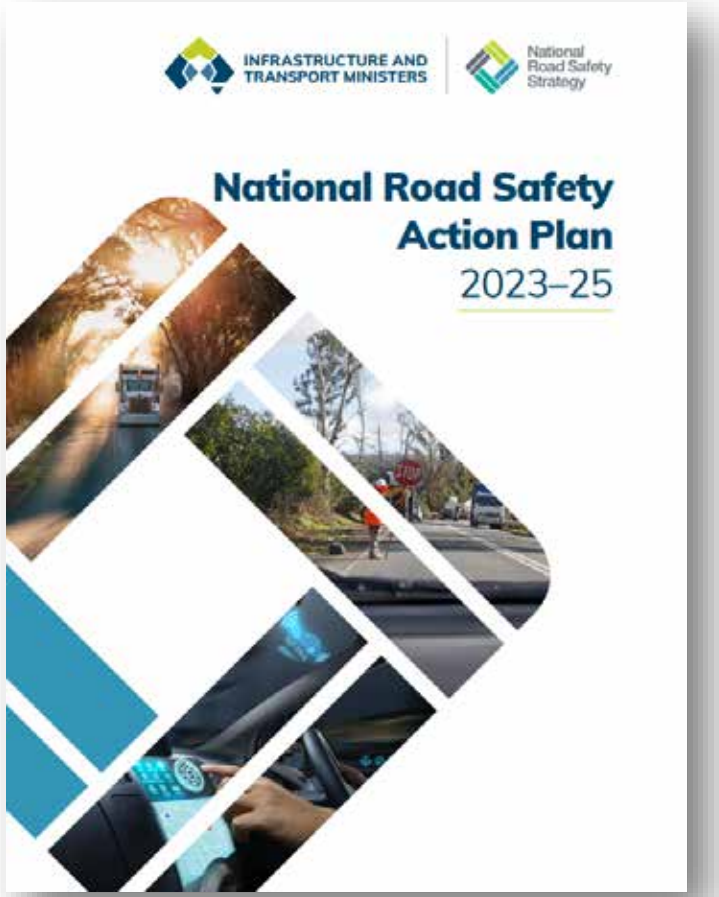
Road safety in Australia

- National Road Safety Strategy 2021-30 sets the direction for road safety in Australia for this decade
- National Road Safety Action Plans provide a detailed roadmap for the Australian, state and territory governments to implement the Strategy





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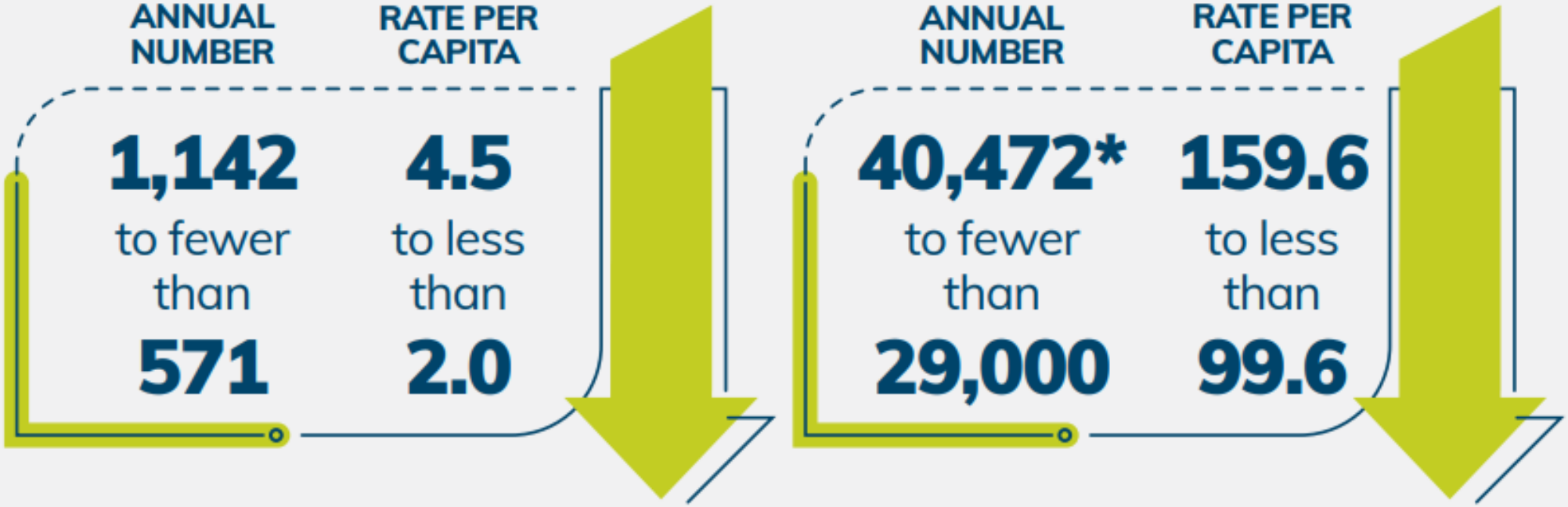
Targets by 2030

Fatalities reduced by **50%**

an approximate reduction in rate per capita of **55%**

Serious injuries reduced by **30%**

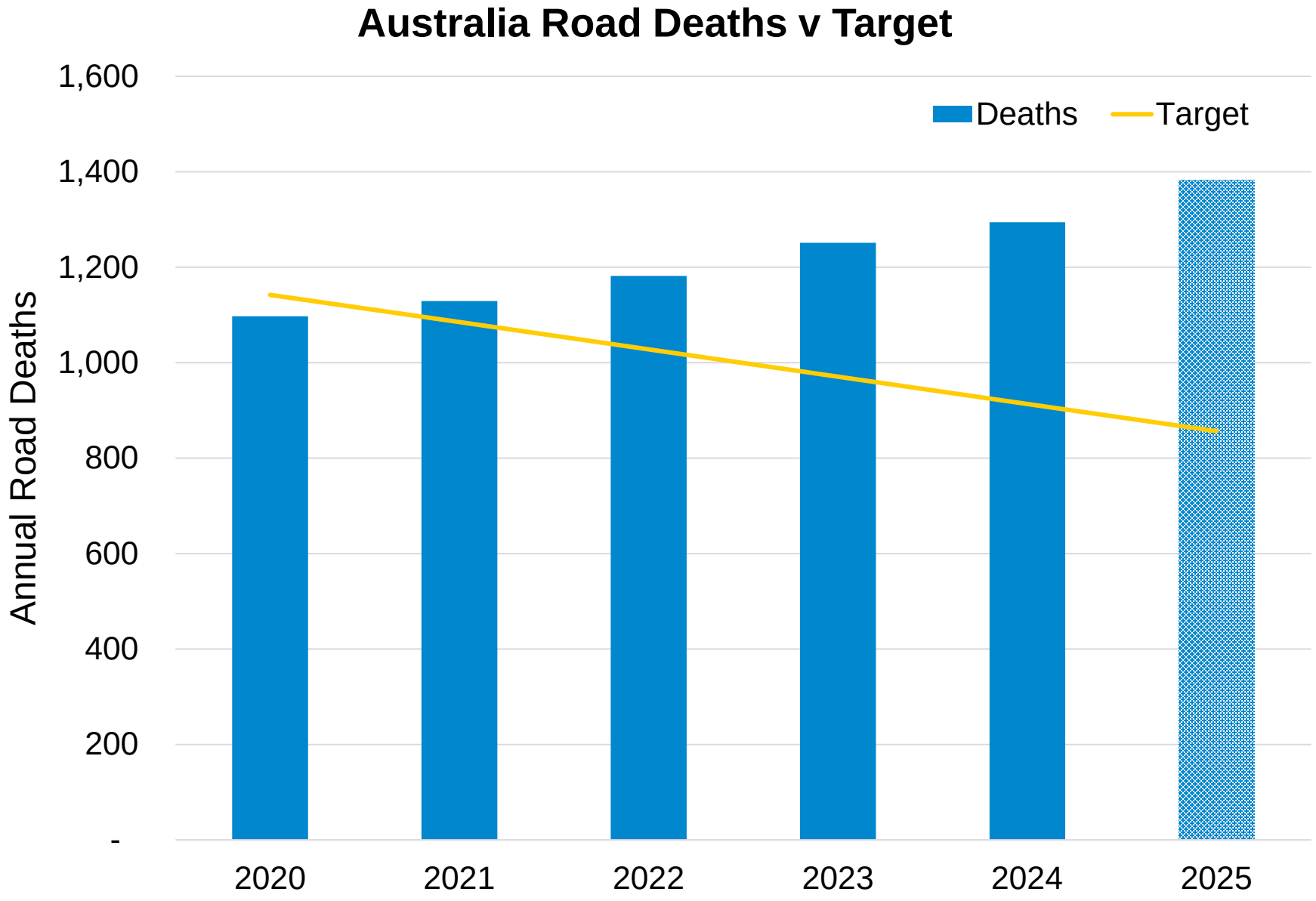
an approximate reduction in rate per capita of **38%**



*National Road Safety Strategy baseline is 40,472 serious injuries. This is a 3-year average of hospital cases for 2017–18 and 2018–19, and estimates for 2019–20.

Long-term goal: zero fatalities by 2050 and zero serious injuries by 2050

National trends in road trauma



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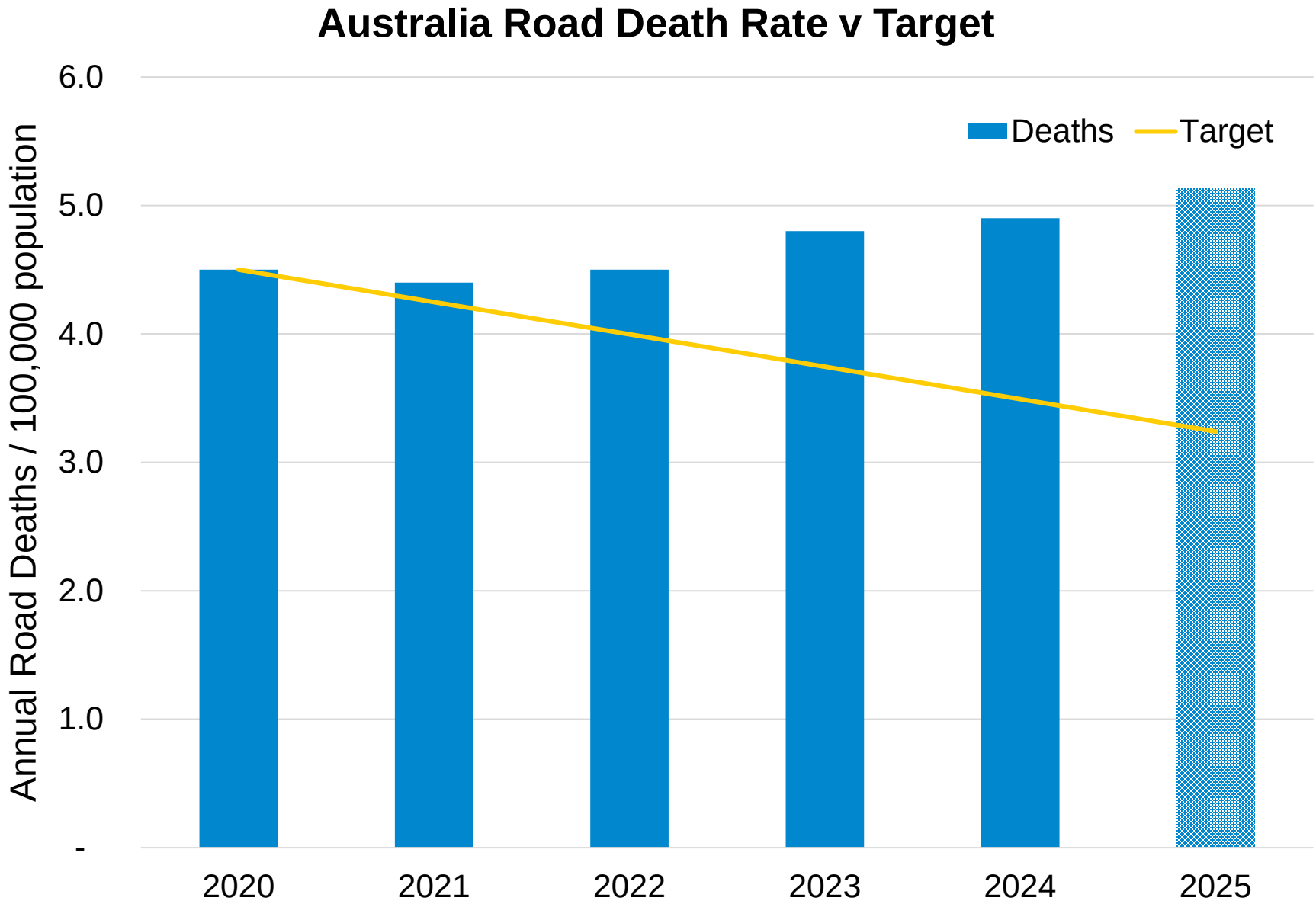
National trends in road trauma



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Project background

- In 2024, the Australian Government commissioned the ACRS to deliver this action from the National Road Safety Action Plan 2023-25 to support local government
- ACRS engaged Ableyto help deliver the project

SUPPORTING LOCAL GOVERNMENT

A significant proportion of Australia's road network is managed by local governments. Building and retaining road safety capabilities within local government is an important component of achieving the objectives of the Strategy. Governments will take the following actions to improve local government road safety capabilities through this Action Plan.

The Australian Government will:

Action	By when
Lead the development of a framework in consultation with all governments, to support local governments to conduct fit for purpose network road safety risk assessments to prioritise infrastructure investment	Late 2023
Co-ordinate the delivery of road safety training to local governments in consultation with state and territory governments	Late 2024

State and territory governments will:

Action	By when
Provide local governments with access to serious injury and fatality data for their networks	Commence late 2023
Support local governments to improve the data they hold on local road networks, to: • Better understand the safety of their network • Report on and invest in their local infrastructure • Communicate and engage with their communities on road safety	Ongoing

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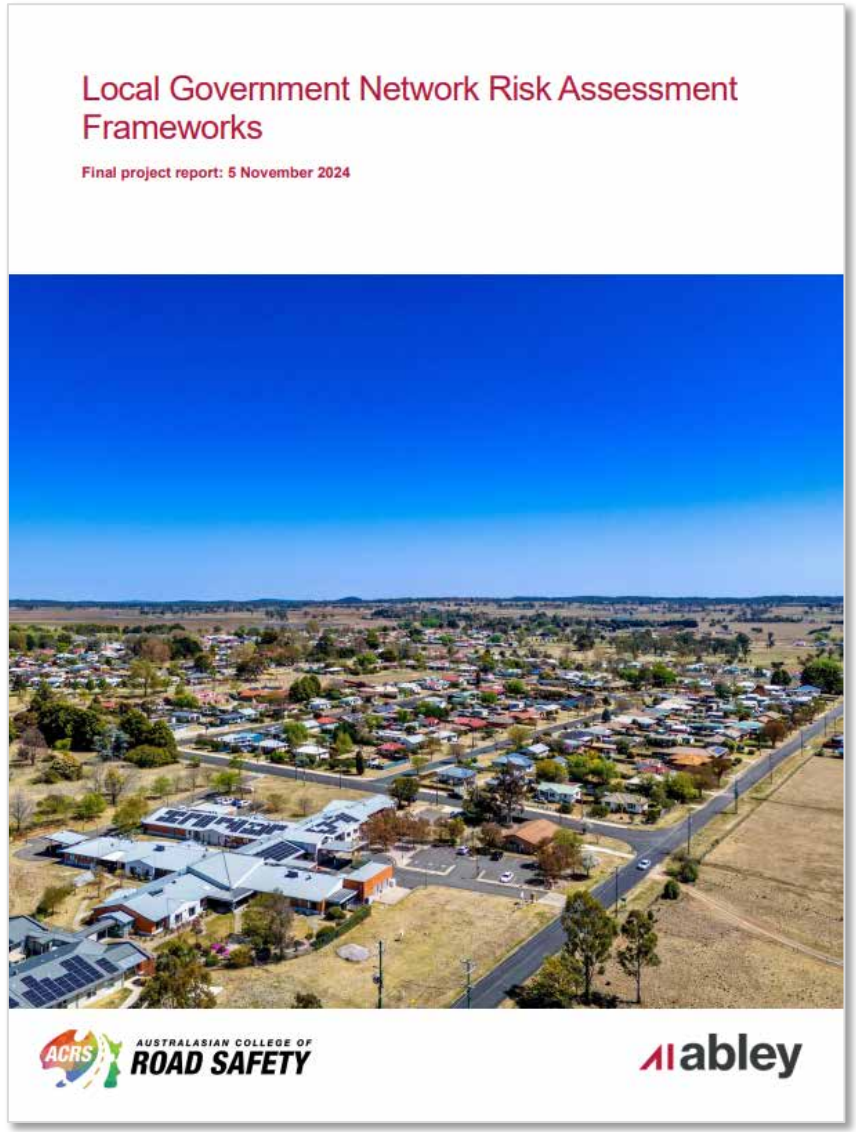
Project objectives

Work closely with local, state and territory governments and local government associations to:

1. Identify and review current network risk assessment methods used by state and local governments
2. Define a ‘fit-for-purpose’ network risk assessment that works for both state and local requirements
3. Suggest frameworks for governments and associations to help build risk assessment and broader road safety capability in local government



https://www.officeofroadsafety.gov.au/data-hub/resources

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What is Network Risk Assessment?

A network risk assessment:

- uses crash data (reactive) and/or road and road environment information (proactive)
- use thresholds or ratings define levels of risk
- the primary output is usually a map
- it can be applied across all or part of a network
- it can include corridors and intersections assessed together, or separately
- it can assess risk to all road users or focus on risk to specific road user groups, such as motorcyclists.

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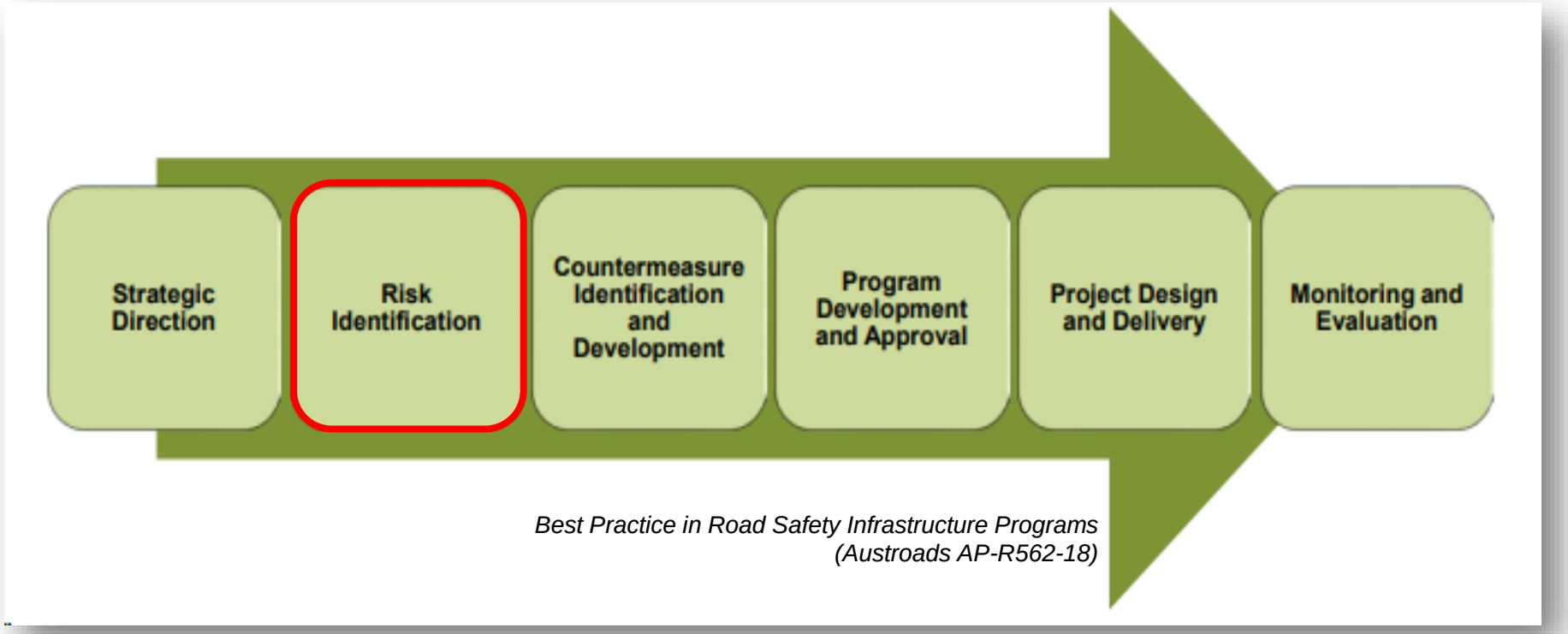
Why are Network Risk Assessments important?

Crucial link between strategy and action – guiding road authorities to high-risk locations to prioritise for investment in road safety treatments.



Best Practice in Road Safety Infrastructure Programs (Austroads AP-R562-18)

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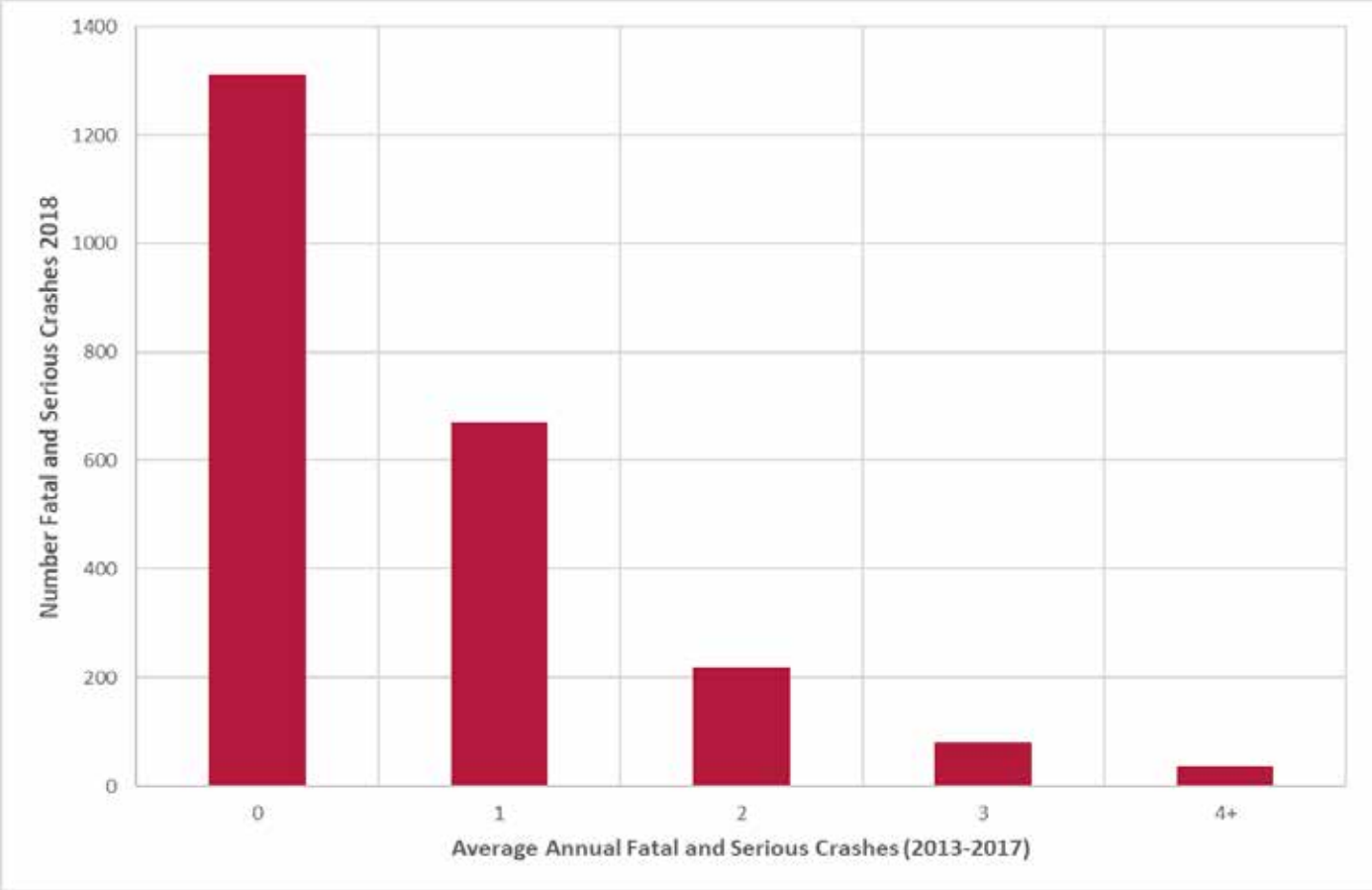
Reactive or proactive approaches?



Can they be used for funding applications?

- **Yes!** Network risk assessments can be used to apply for funding for a proactive project through the Federal Black Spot Program
- Network risk assessments are an integral component of Network Safety Plans – something the National Road Safety Action Plan 2023-25 expects all levels of government (including local government) to develop.

https://investment.infrastructure.gov.au/sites/default/files/documents/black-spot-program-guidelines.pdf

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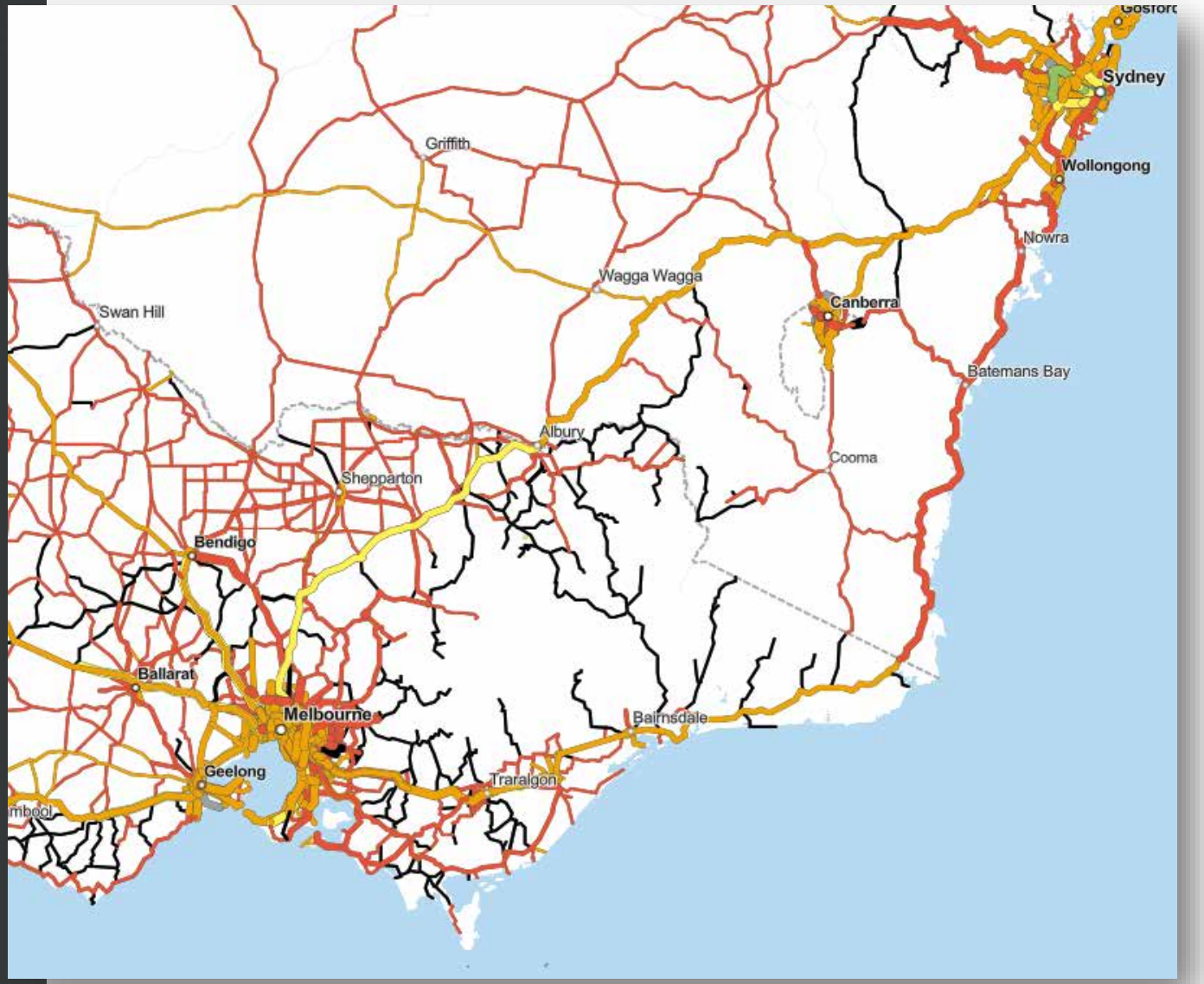
1. Identify and review current network risk assessment methods used by state and local governments



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Current Network Risk Assessment Methods

Crash based methods

Crash risk assessed using crash history (crash data)

E.g. blackspot analysis, crash risk mapping

RAP methods

(iRAP, AusRAP, Ai-RAP)

AusRAP

Roads assessed in 100m sections to determine star rating

ANRAM

(Australian National Road Assessment Model)

RAP data + crash prediction models, & FSI crash history.

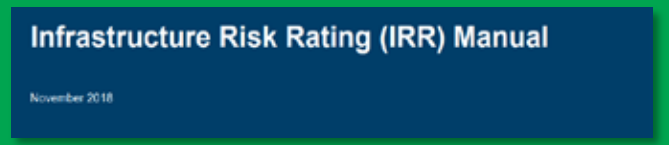
Output used in infrastructure programs (calculating FSI savings, BCR etc)

Austroads "Stereotypes"

Estimated star ratings & crash risk (FSI crashes/100M VKT)

Infrastructure Risk Rating (IRR)

8-9 attributes assessed for



Roads rated "High" to "Low" risk. Used in speed limit setting: QLD, VIC.

LG Stars (WA)

Simple tool for LG roads in WA, based on road stereotypes.

Output is a simplified star rating (<1-star, 1-star, 3-star, 5-star)

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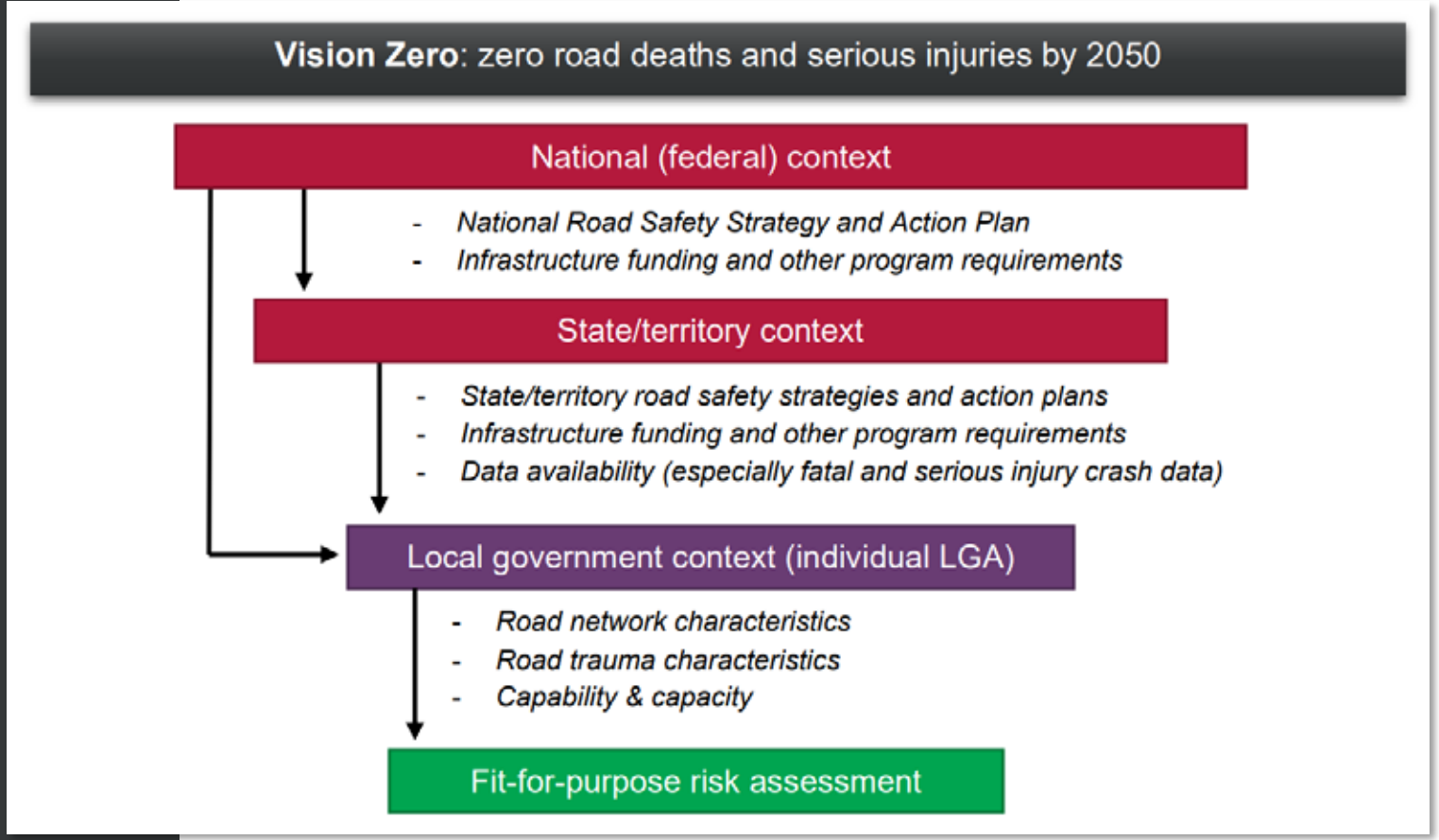
2. Define a ‘fit-for-purpose’ network risk assessment that works for both state and local requirements



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Defining ‘fit-for-purpose’ – local government context

Road trauma characteristics

- Scale (compared to other LGA)
- Systemic risks (FSI):
  - *High-speed lane departure*
  - *Vulnerable road users*
  - *Intersections*

Road network characteristics

- Total length (km)
- Sealed vs unsealed
- Urban vs rural
- Traffic volume
- Unique risk factors *(heavy vehicles, seasonal traffic...)*

Capability and capacity

- Skilled & available staff
- Access to funding
- Access to data
- Support from managers
- Political motivations
- Competing priorities
- *Support from other organisations, e.g. state government*

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Categories of Network Risk Assessment Methods

Proactive *Tier 1 (Advanced)*

RAP methods
(iRAP, AusRAP, Ai-RAP)

ANRAM
(Australian National Road Assessment Model)

Proactive *Tier 2 (Intermediate)*

Infrastructure Risk Rating
8-9 attributes

Austroads "Stereotypes"
13 road stereotypes with several cross-sections

Proactive *Tier 3 (Basic)*

LG Stars (WA)
Simple tool for LG roads, using road stereotypes

Scale	← Segments (100m)	Corridors	Networks →
Inputs	← Many	Some	Few →
Predictive capability	← High	Moderate	Low →

Scale of infrastructure investment

High cost, transformational ($$$$$) ← Low-moderate cost ($$$) → Very low cost ($), maintenance, speed management

Assessments using crash data: Generally suitable for higher volume roads only. Combine with proactive risk metrics. Modify with FSI equivalents

Use crash data to determine systemic risks, across a network

Selecting a ‘fit-for-purpose’ method

Step 1: Check whether the state or territory recommends a specific method

Step 2: Use road trauma data to quantify systemic risks

Step 3: Review the characteristics of the local road network

Step 4: Determine which type of assessment method is fit-for-purpose

Step 5: Review and refine assessment methods

3. Frameworks for governments and associations to help build risk assessment and broader road safety capability in local government

Options considered:

A. Local government led

B. State/territory led

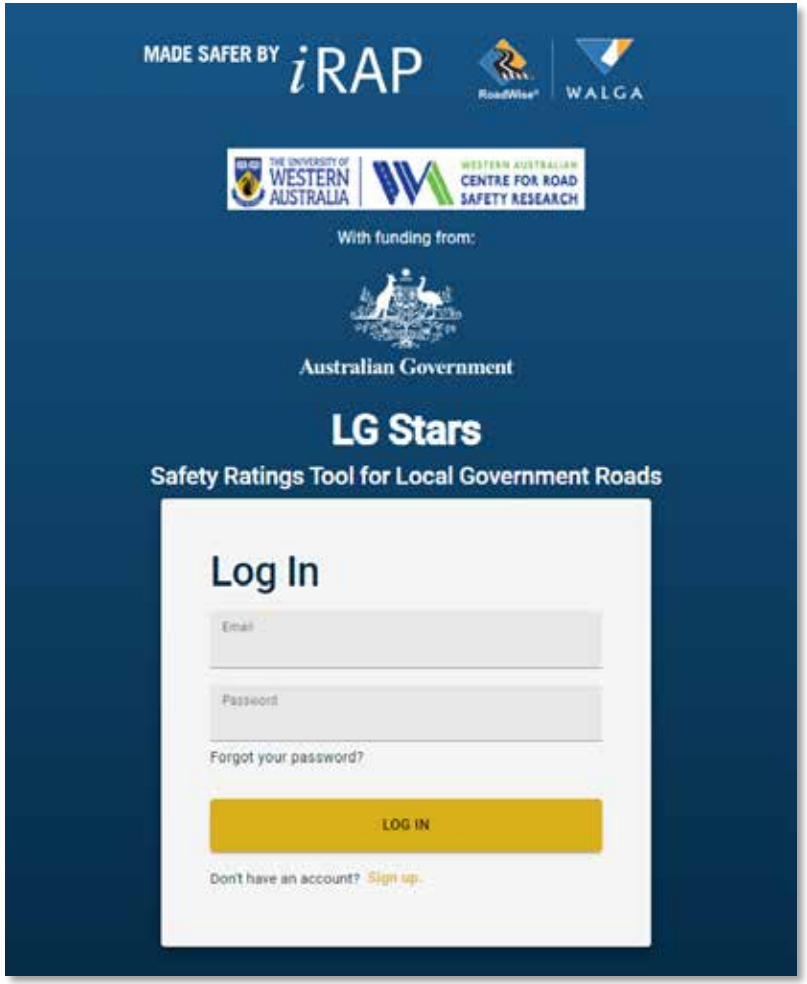
C. Co-design approach

Option A: Local government led

Federal government, state/territory government and/or local government association provides support, for example:

- skilled resources: e.g. regional coordinators
- LG specific guidance
- training
- templates and tools
- access to data

Example - WALGA RoadWise and LG Stars:
Assessment guide, online tool and training. Regional advisors assist individual local governments with their assessments.



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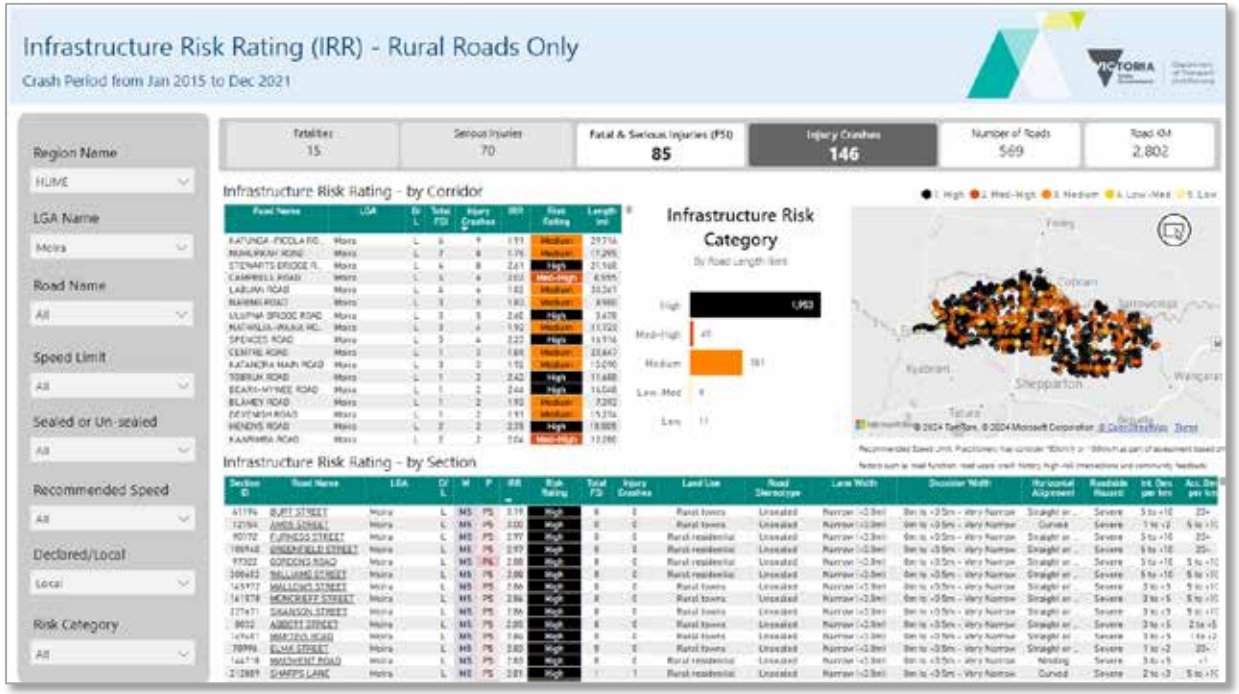
Option B: State/territory led

The umbrella body commissions or undertakes assessments on behalf of local government, for example:

- coordinating data collection
- commissioning consultants/providers
- running automated risk assessments
- delivering outputs to local government
- providing supporting resources



Example – Victoria IRR assessment of local roads
DTP mapped crash risk and IRR for every local road. This is shared with councils via a PowerBI dashboard.

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Option C: Co-design approach

Working in partnership with local governments to deliver risk assessments, and to identify, plan and prioritise road safety infrastructure improvements.

Safer Local Roads and Streets Program Victoria (TAC + DTP)

The program includes a collaborative workshopping process with LGA to assess and analyse road safety risks, and identify potential projects

Comparison of options

Factor	(a) LGA-led	(b) State/territory-led	(c) Co-design approach
Provides enduring support to local government?	Potentially	Potentially	Yes
Effort required from umbrella organisation	Low	Moderate	High
Effort required from each LGA	High	Low	Moderate
Meets the needs of different LGA?	Potentially, depending on the support is provided	To some degree	Yes
Cost effectiveness (for risk assessments)	Poor-moderate depending on the type of support provided	Good, due to economies of scale	Moderate
Develops local govt road safety knowledge/expertise	Yes – but only for those LGA that undertake assessments.	Moderate, depending on what additional support is provided	Yes
Provides support beyond risk assessments	Potentially, depending on the support is provided	Potentially, depending on the support is provided	Yes
Rate at which assessments are undertaken (e.g. km network assessed over time)	Low-moderate, depending on the type of support provided	High	Moderate – should achieve good network coverage, but takes time due to the collaborative approach

To recap

Urgent action is needed to reverse current road trauma trends

Network risk assessments enable you to target and prioritise road safety investment

A wide variety of assessment methods exist. Select the method that best suits your local government context

Network risk assessments can be used to unlock funding for proactive projects

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Questions?

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