

New Direction for AusRAP – Austroads Leadership of Australian Road Assessment Program

23 November 2021



Today's Moderator



Ekaterina Kologrivova

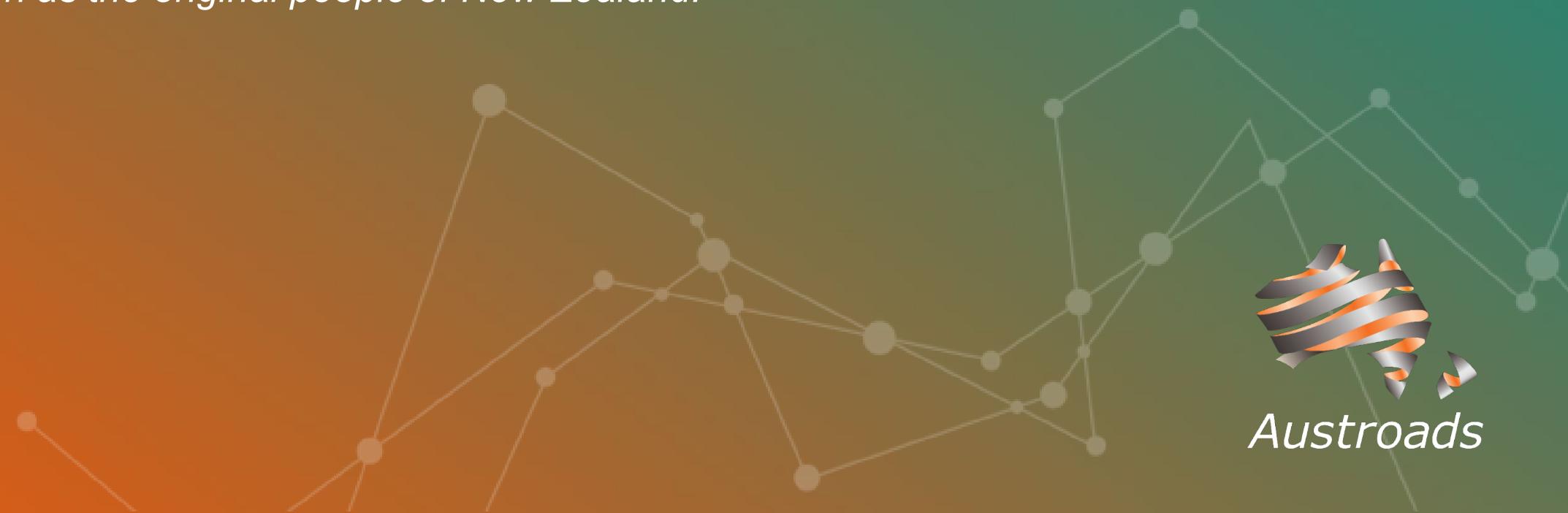
Communications Officer
Austroads

P: +61 2 8265 3302

E: ekologrivova@austroads.com.au

Austroads acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to Elders past, present and emerging for they hold the memories, traditions, culture and hopes of Aboriginal and Torres Strait Islander peoples of Australia.

Austroads acknowledges and respects the Treaty of Waitangi and Maori as the original people of New Zealand.



About Austroads

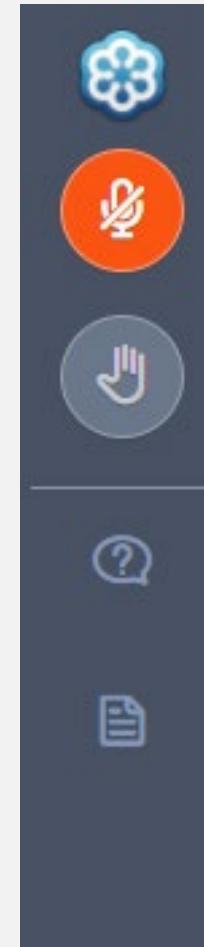
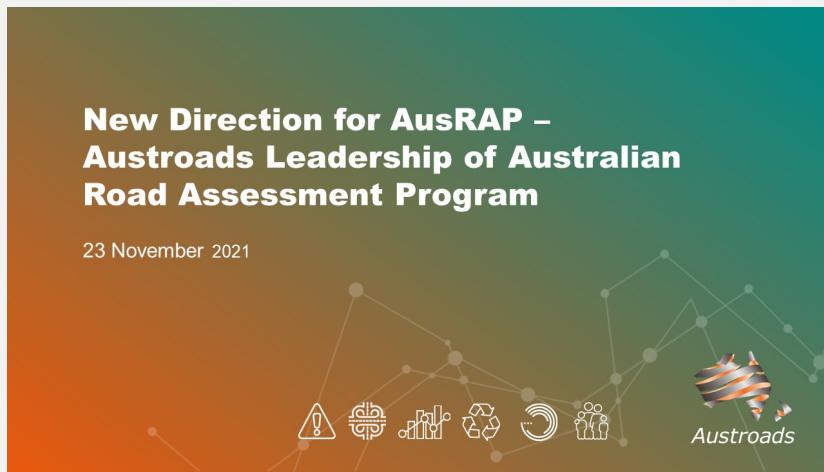
The collective of Australasian transport and traffic agencies

- Transport for NSW
- Department of Transport Victoria
- Department of Transport and Main Roads Queensland
- Main Roads Western Australia
- Department of Infrastructure and Transport South Australia
- Department of State Growth Tasmania
- Department of Infrastructure, Planning and Logistics Northern Territory
- Transport Canberra and City Services Directorate Australian Capital Territory
- Commonwealth Department of Infrastructure, Transport, Regional Development and Communications
- Australian Local Government Association
- Waka Kotahi NZ Transport Agency

Housekeeping



Webinar duration = 60 mins



Download the
presentation
slides

Today's Presenters



Geoff Allan
Chief Executive Officer,
Austroads



Michael Nieuwesteeg
Road Safety and Design
Program Manager,
Austroads



Rob McInerney
Chief Executive Officer, iRAP



James Bradford
Technical Director, iRAP, EuroRAP & RSF



John Hardwick
Executive Director – Asset
Management, Transport for NSW

Today's Agenda

Topic	Presenter
Welcome to Austroads Leadership of AusRAP	Geoff Allan and Michael Nieuwesteeg
iRAP Global Partnerships Across 100+ Countries	Rob McInerney
EuroRAP Case Study – Government Policies, Investment and Publication of Results – UK and European Experience	James Bradford
Celebrating and Sharing Success	John Hardwick
Next Steps for the Australian Road Assessment Program	Michael Nieuwesteeg

Welcome to Austroads Leadership of AusRAP

Geoff Allan and Michael Nieuwsteeg



The AusRAP Journey



Austroads

Australian Automobile Association (AAA)

Australian Road Research Board (ARRB)

International Road Assessment Programme (iRAP)

Australasian College of Road Safety (ACRS)

Infrastructure Australia

Roads Australia

Commonwealth Government

Australian Local Government Association

Austroads Role



Austroads exists to promote national uniformity and harmony, to avoid unnecessary duplication, and to support identification and application of world best practice in the management of roads.

The Road Safety and Design Program is creating the PATH to eliminating road trauma by 2050.

We do this through:

Guidance:

Central source of best practice standards

Accreditation:

Educating and certifying people, products and processes

Harmonisation:

Unifying standards across functions and jurisdictions

Leadership:

Facilitating meaningful conversations between members and stakeholders

Partnering:

Influencing directions in related fields

Our **SAFE** Vision is Laying the Foundations for Zero



Safety tool kit

- Usable, relevant and responsive



Accreditation

- Applying best practice through standardised delivery



Facilitation

- Collaboration and engagement



Expertise

- Research, develop and transfer





AusRAP

AUSTRALIAN ROAD ASSESSMENT PROGRAM

The AusRAP opportunity:

- ✓ **Consistent and trusted reporting**
- ✓ **Meaningful public communication**
- ✓ **Expanding reach of iRAP tools**

	Km Star Rated 308,907
	Km Road Designs Star Rated 417
	Km Light Star Rated 33,000
	Km Risk Mapped 41,328
	Estimated Investment Made Safer (USD million) \$ 15,998.34
	People Trained 1,641
	SR4S - Schools Assessed -
	3-Star or Better Policies 10

iRAP Global Partnerships Across 100+ Countries

Rob McInerney





A world free of high-risk roads for all road users

100+ countries

2,500,000+ km

us\$80bn+
investment made safer

<https://irap.org/about-us/where-we-work/>



Global Standard: Local Leadership

<https://irap.org/rap-tools/>



Austroads



GLOBAL PLAN

DECade of Action for Road Safety
2021-2030



Target 3: By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.

iRAP Programme Partnerships



Star Rating for Schools
in 43 countries



DfT Risk Mapping and
Safer Roads Fund



RussiaRAP National
Programme



China MoT "Highway
Safety to Cherish Life"



FHWA partnership
with State DoTs and
Counties



EU RISM Directive;
EIB 3-star or better



IndiaRAP toll-roads +
Australian twinning



ThaiRAP IRF Award
"Light-data integration"



62,000km assessment
underway, 3-star or better
targets on PPP concessions



Tanzania: Ten Steps
South Africa Provinces
TunisiaRAP Risk Mapping
Israel, Bahrain, Morocco, Nigeria



IndonesiaRAP launch
Vietnam National Policy
Samoa, Fiji 3-star or better



iRAP Innovation Partnerships



aiRAP

STAR RATING FOR DESIGNS
SAFE ROADS, RIGHT FROM THE START

The International Road Assessment Programme recognises PT Jasa Marga (Persero) Tbk on achievement of a 3-Star Rating for vehicle occupants in recent safety upgrades on Tol Jagorawi (Jakarta - Bogor - Ciawi).

Vehicle Occupant Star Ratings

Star Ratings	Length (km)	Percent
5 stars	5.00	5.00%
4 stars	65.20	75.64%
3 stars	16.00	18.56%
2 stars	0.00	0.00%
1 star	0.00	0.00%
Not applicable	0.00	0.00%
Total	86.20	100.00%

IN ASSOCIATION WITH

JASAMARGA

UNIVERSITAS INDONESIA

ROB MCINERNEY CHIEF EXECUTIVE OFFICER, iRAP 13 November 2020

SUBAKTI SYUKUR PRESIDENT DIRECTOR, PT JASA MARGA (PERSERO) TBK

iRAP FIA FOUNDATION Because every life counts.

NSW GOVERNMENT GOVERNMENT OF WESTERN AUSTRALIA UTS ANDITI TOMTOM

IMOVE

5-star rating graphic

NSW Government logo

Government of Western Australia logo

UTS logo

ANDITI logo

TOMTOM logo

IMOVE logo

5-star rating graphic

NSW Government logo

Government of Western Australia logo

UTS logo

ANDITI logo

TOMTOM logo

IMOVE logo

STAR RATING FOR DESIGNS SAFE ROADS, RIGHT FROM THE START

STAR RATING CERTIFICATE

The International Road Assessment Programme recognises PT Jasa Marga (Persero) Tbk on achievement of a 3-Star Rating for vehicle occupants in recent safety upgrades on Tol Jagorawi (Jakarta - Bogor - Ciawi).

Vehicle Occupant Star Ratings

Star Ratings	Length (km)	Percent
5 stars	5.00	5.00%
4 stars	65.20	75.64%
3 stars	16.00	18.56%
2 stars	0.00	0.00%
1 star	0.00	0.00%
Not applicable	0.00	0.00%
Total	86.20	100.00%

IN ASSOCIATION WITH

JASAMARGA

UNIVERSITAS INDONESIA

ROB MCINERNEY CHIEF EXECUTIVE OFFICER, iRAP 13 November 2020

SUBAKTI SYUKUR PRESIDENT DIRECTOR, PT JASA MARGA (PERSERO) TBK

iRAP FIA FOUNDATION Because every life counts.

cyclerap

CycleRAP Score
49.51
Extreme risk

V-B Conflicts with vehicles 0.00

B-B Conflicts between bicycles and/or light mobility vehicles 12.38

B-P Conflicts with pedestrians 12.38

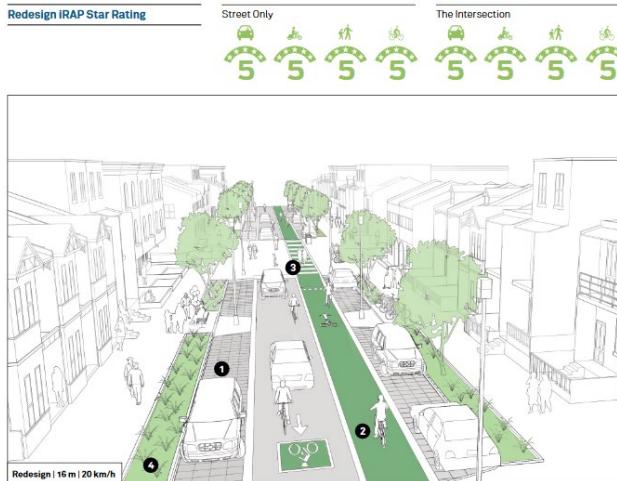
SB Crashes which do not involve others 24.76

STAR RATING FOR SCHOOLS

SCHOOL ASSESSMENTS TOOLKIT

Vietnam

Design Standards



Global Designing
Cities Initiative

Financing



Celebration of Success



EuroRAP Case Study – Government Policies, Investment and Publication of Results – UK and European Experience

James Bradford



Road Safety Foundation



About

- Established in 1986
- Founding partner of EuroRAP and key to developing iRAP

Programme

- Annual Crash Risk Mapping since 2002
- Star Rating for Highways England and Local Authorities
- DfT initiatives: Safer Roads Fund and RAF bases
- Research:
 - Urban road safety measures
 - Active travel Star Rating demonstrator
 - Telematics speed data sharing platform



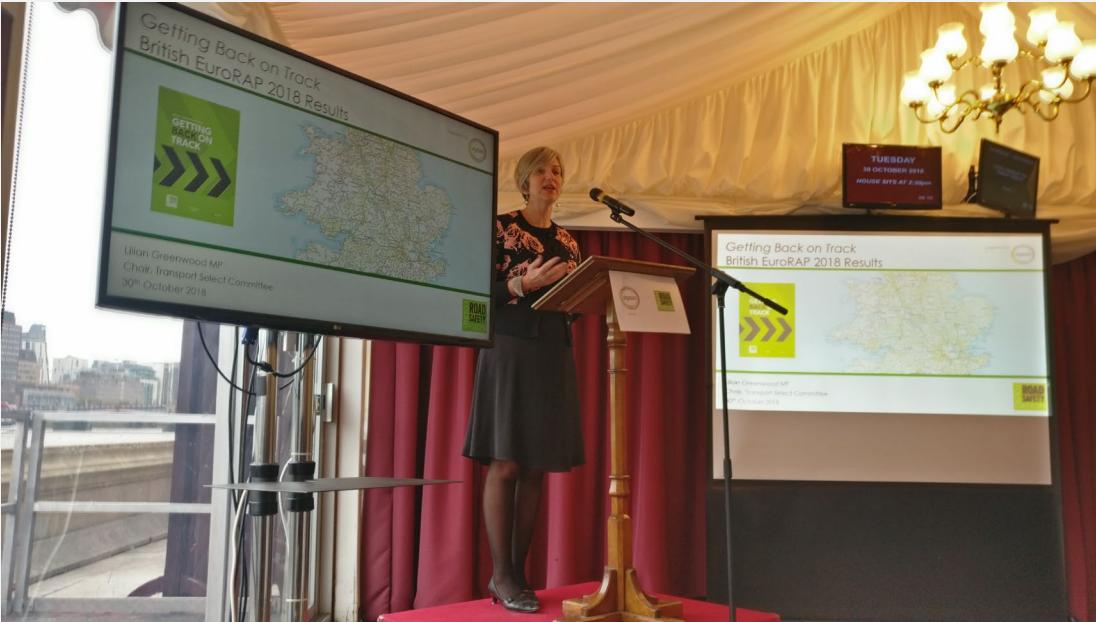
Crash Risk Mapping & Performance Tracking



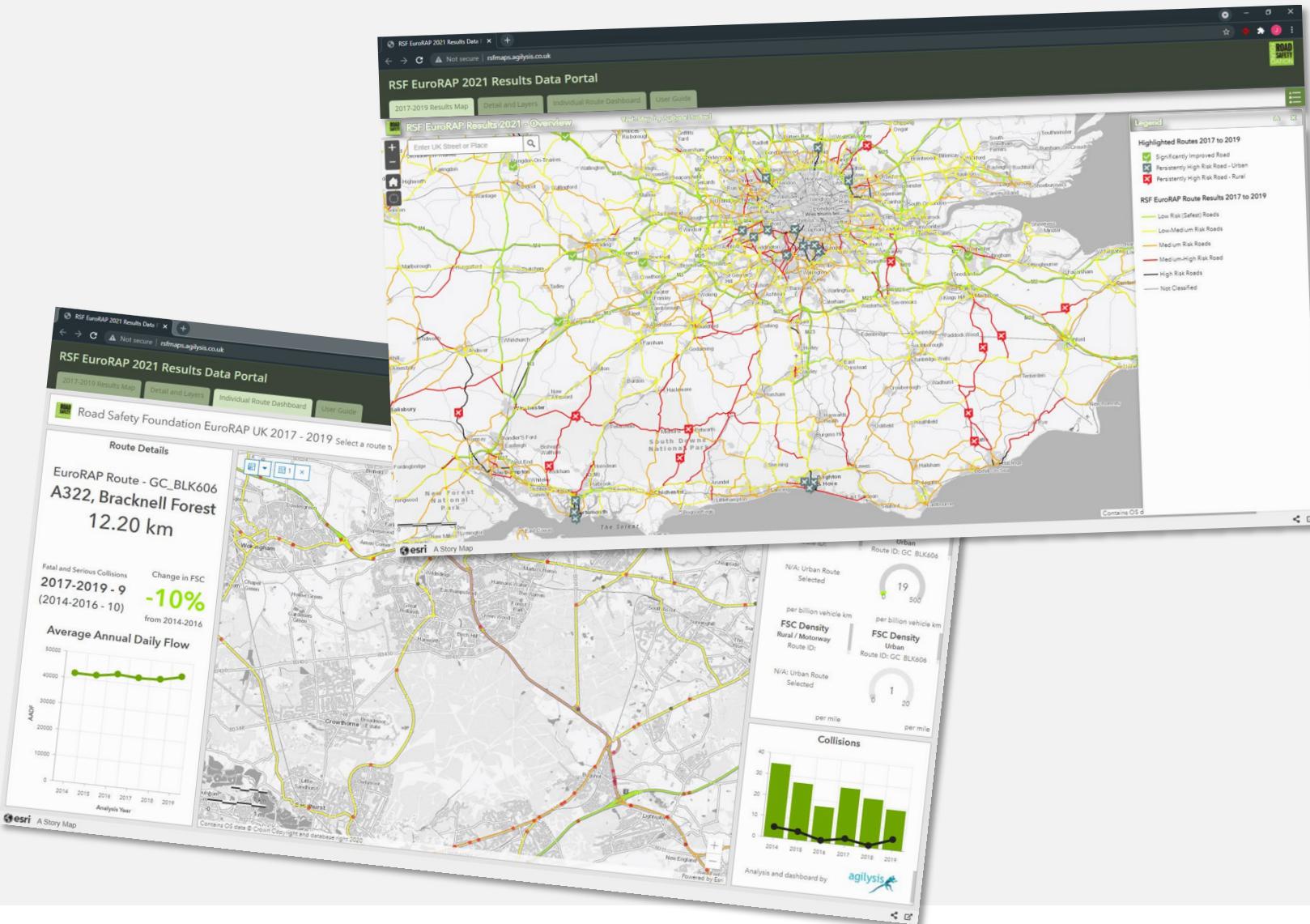
Analysis of all A roads and motorways in Great Britain



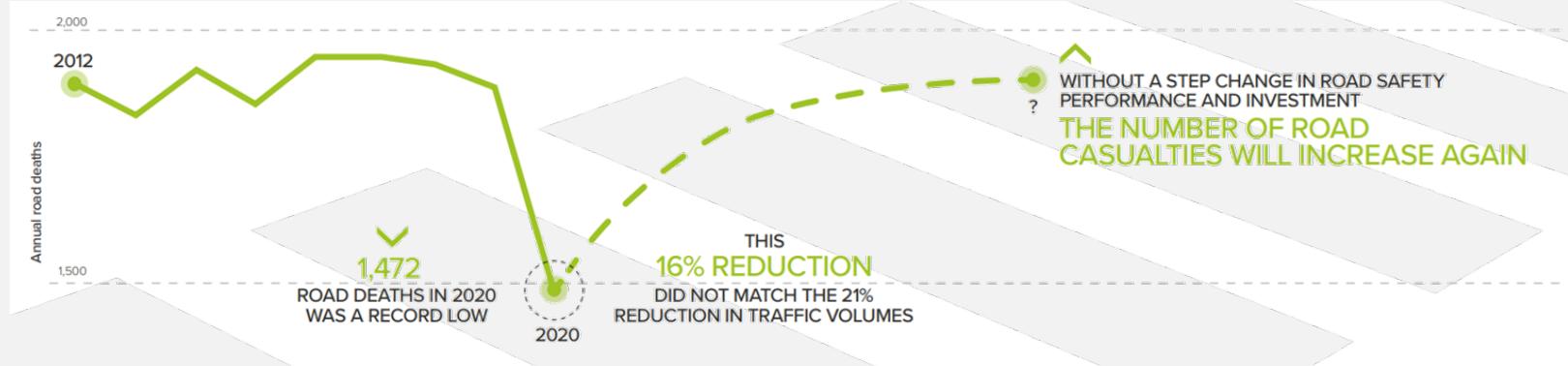
Building Back Better



Building Back Better



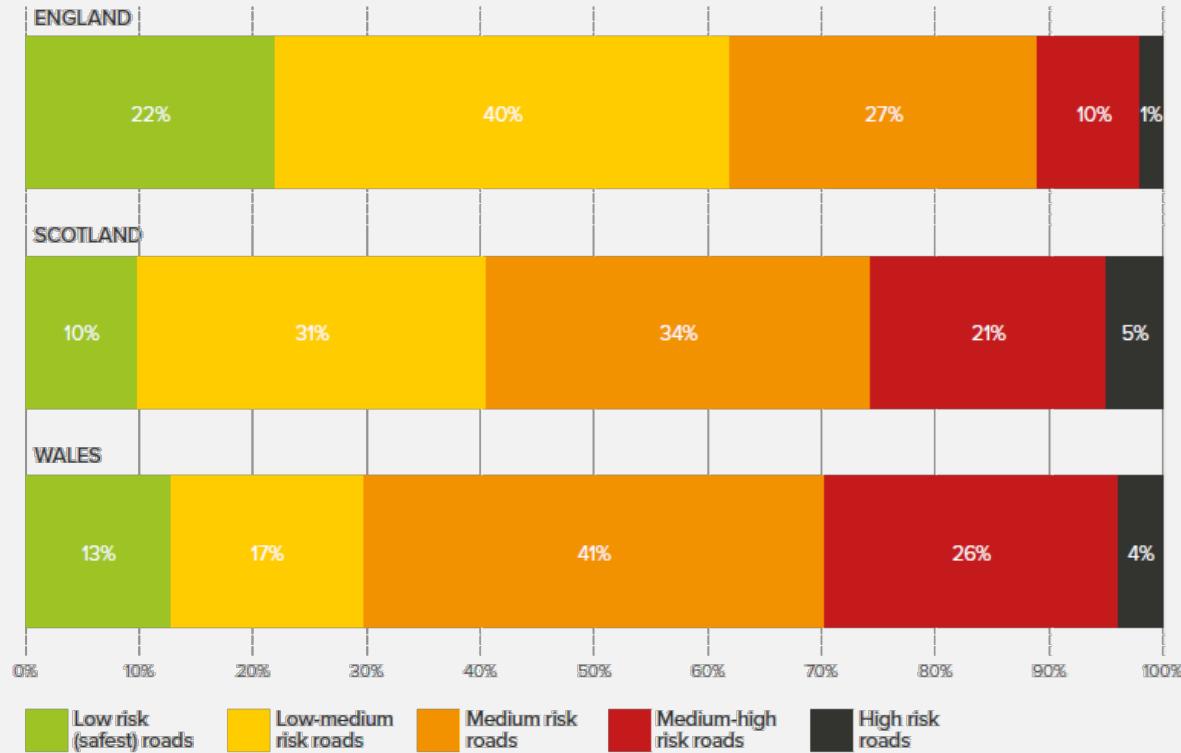
Thematic Analysis



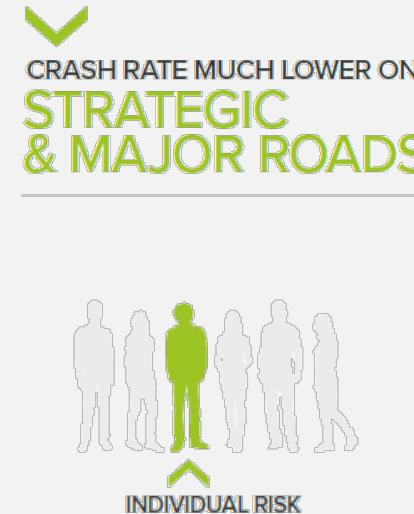
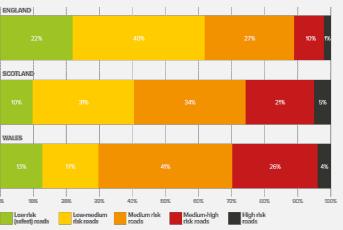
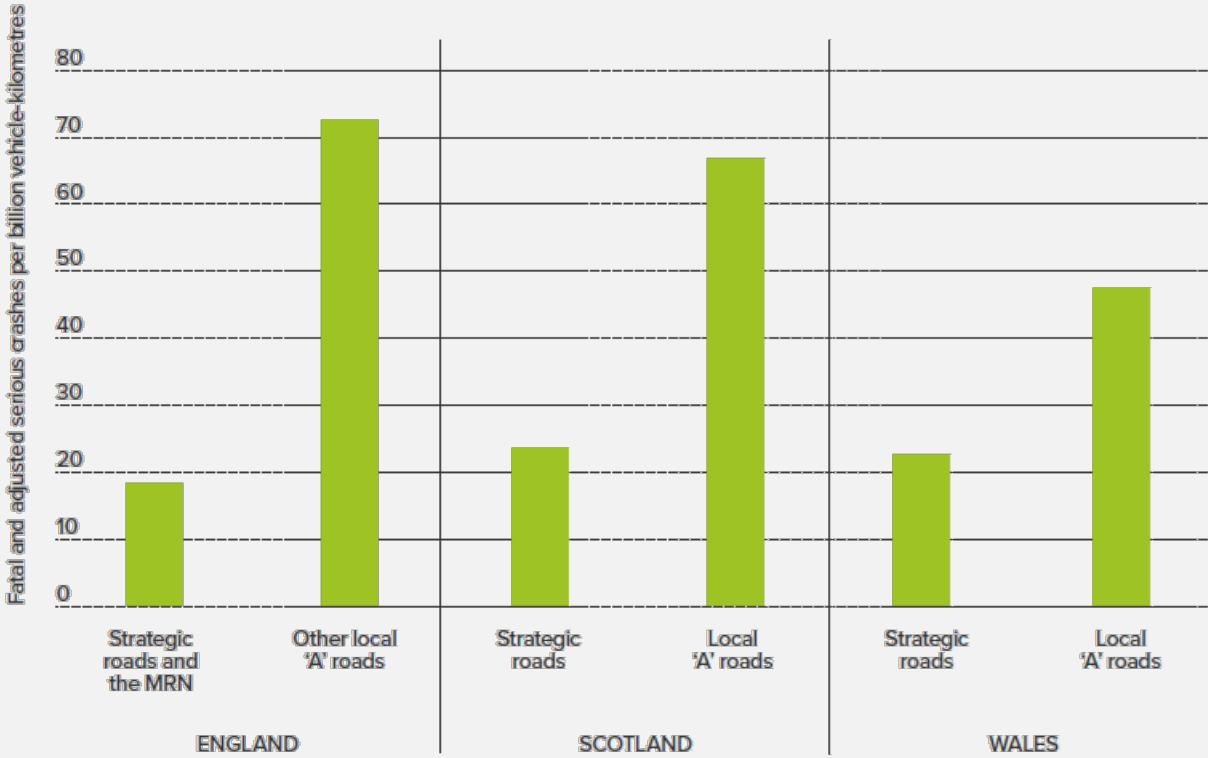
Road no.	Road authority/ies (100% unless stated)	Route description	% contribution by crash type 2017-2019													
			Being addressed through DfT's Safer Roads Fund	Road length (km)	Road type	Fatal and adjusted serious crashes (2014-2016)	EuroRAP risk rating (2014-2016)	Fatal and adjusted serious crashes (2017-2019)	EuroRAP risk rating (2017-2019)	Motorcycle involved %	Pedestrians / cyclists %	Junctions %	Run-offs %	Head-ons %	Rear end shunts %	Other %
A199	East Lothian	Between the A1 near Dolphinstone Farm and the A1/B6471 west of Haddington	No	11	Single	9	115	17	202	9	72	18	0	9	0	0
A1028	Lincolnshire	Between the A16 and the A158 near Spilsby	No	9	Single	7	189	10	187	13	0	75	13	0	0	13
A683	*Lancashire	Between the A6 in Lancaster and the A65 near Kirkby Lonsdale	Yes	25	Single	20	141	23	162	22	6	33	39	17	0	6
A58	Calderdale (74%) Rochdale (26%)	Between the A646 near Halifax and the A6033 in Littleborough	No	19	Single	13	93	22	161	32	32	16	26	11	0	16
A3057	Hampshire (85%) Southampton (15%)	Between the A303 near Andover and the A33 near Southampton Central railway station	No	37	Single	51	168	52	158	32	37	29	13	8	3	11



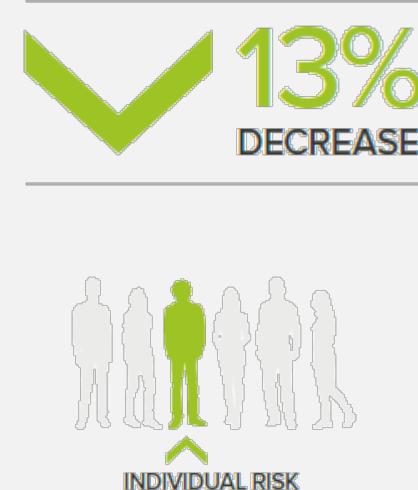
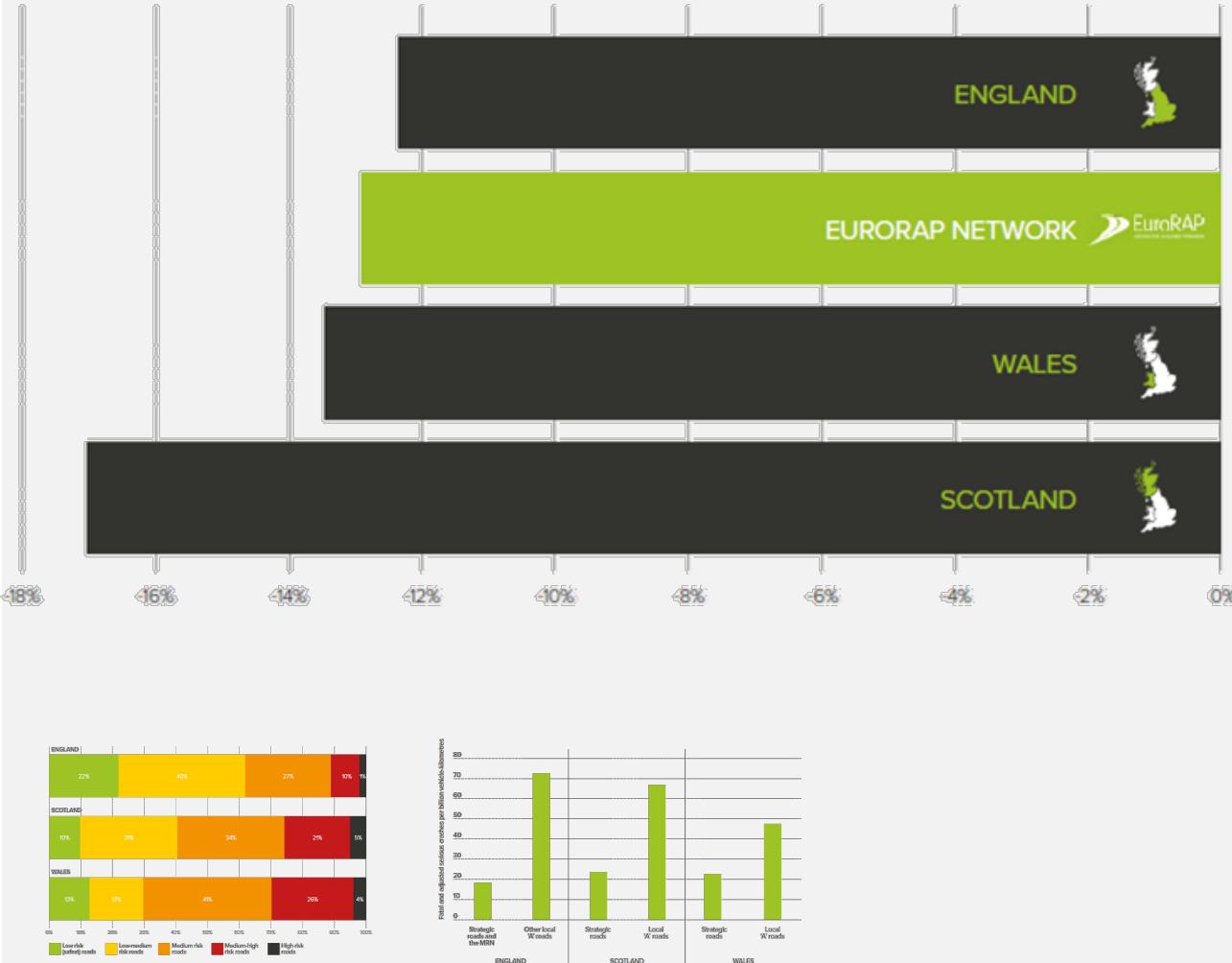
Thematic Analysis



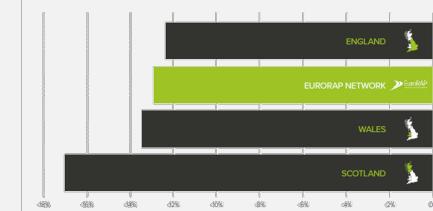
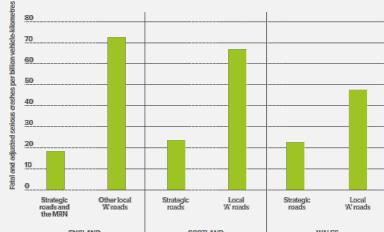
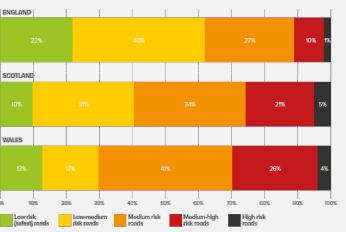
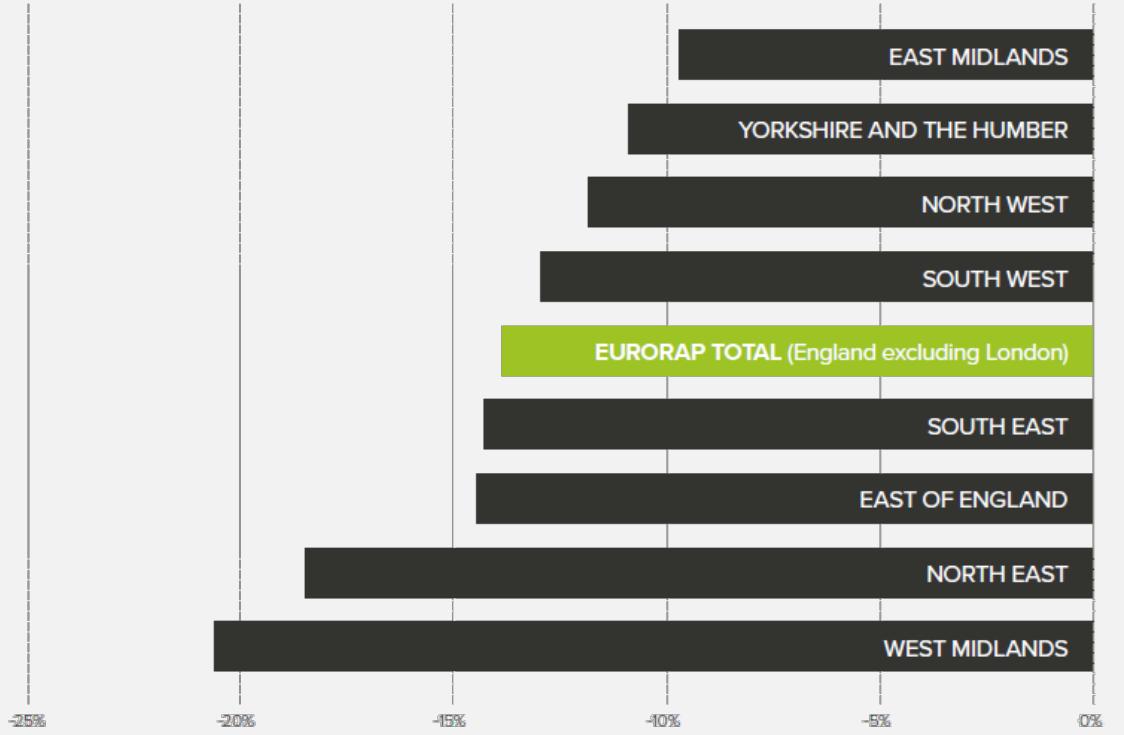
Thematic Analysis



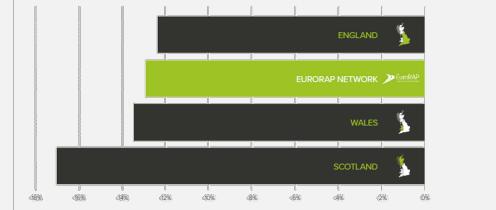
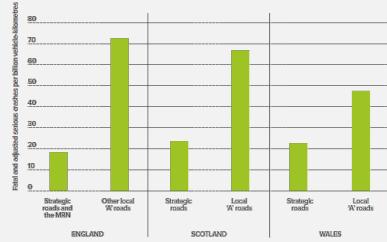
Thematic Analysis



Thematic Analysis



Thematic Analysis



Network	Length (km)	Number of routes	Investment	Estimated 20-year values of prevention	Estimated 20-year fatal and serious injury savings	Estimated benefit-cost ratio ⁵
England						
Strategic	894	46	£254m	£674m	1,638	2.7
Local	2,863	447	£733m	£3,358m	7,356	4.6
Scotland						
Strategic	356	10	£88m	£180m	491	2.0
Local	746	90	£188m	£551m	1,332	2.9
Wales						
Strategic	168	11	£35m	£84m	219	2.4
Local	283	35	£64m	£155m	351	2.4
Total	5,310	639	£1,362m	£5,002m	11,387	3.7



Star Rating Network Wide Assessment



- Road safety performance indicator
- KPI setting and commentary
 - 90% travel on 3 star or above by 2020
- Modelling road safety impact of planned major projects
- Embedding the use of iRAP data
- Local authority networks



Appling iRAP – Route/Corridor Surveys



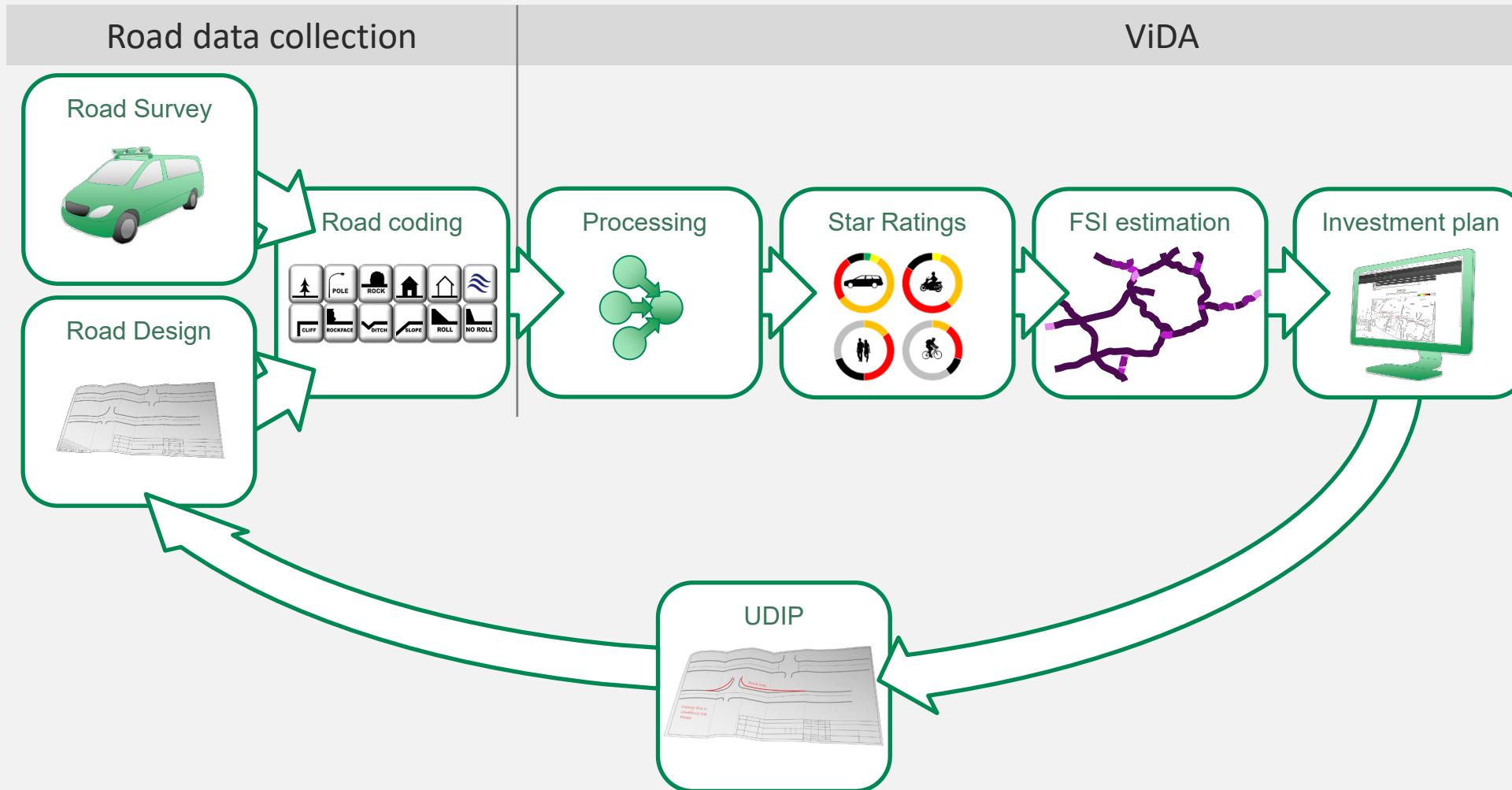
- Testing different investment options
- Modelling of refined Investment Plan
 - Before and after Star Ratings
 - Road Safety Impact Assessment
- Expected FSI saving



Department
for Transport



A Proactive Risk Management Approach



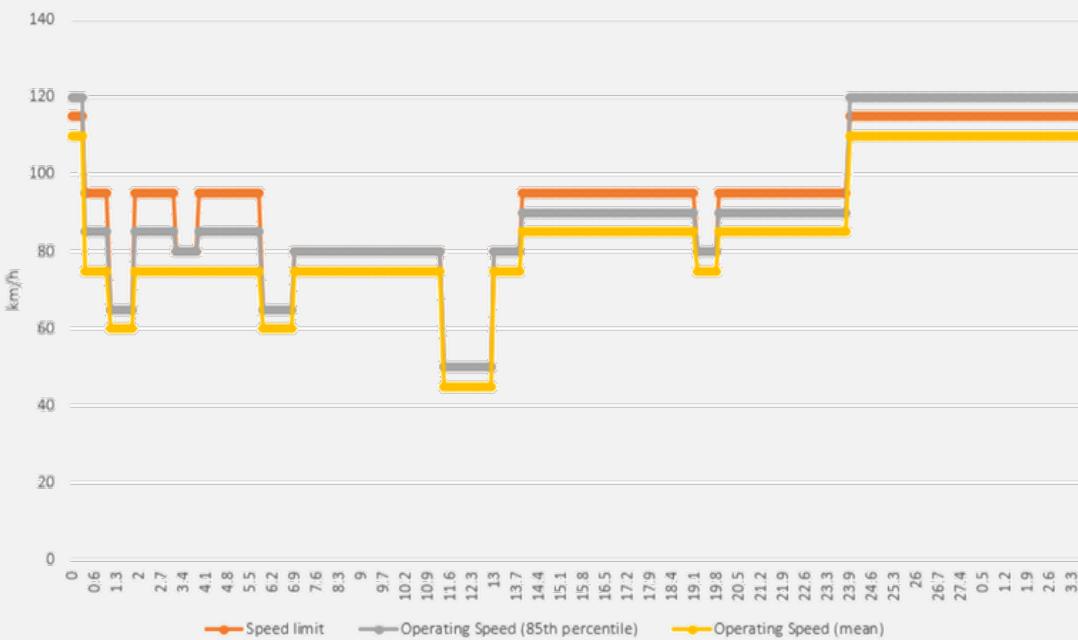
Route Review Tool

The screenshot shows the iRAP Route Review tool interface. On the left, a sidebar displays a tree structure of demonstration projects, with 'Downshire Way' selected. A red arrow points to the 'Downshire Way' node. Below this, a list of segments is shown, each with a distance and a link icon. The main area features a map of a road segment in Bracknell, UK, with various locations labeled. A large inset image on the right shows a photograph of a road with a white van and other vehicles. At the bottom, there is a table for 'Countermeasure' analysis, showing 'FSTs saved' and 'BCR' for different measures like 'Additional lane (2 + 1 road with barrier)', 'Delineation', 'Countermeasure 3', 'Countermeasure 4', and 'Countermeasure 5'. A legend at the bottom right defines symbols for 'Roadside', 'Mid-block', 'Intersections', 'Flow', 'VH/ facilities and land use', 'Speeds', and 'Evaluations'. The bottom navigation bar includes links for 'Delete roads', 'Refresh', 'Export CSV', and 'Admin'.

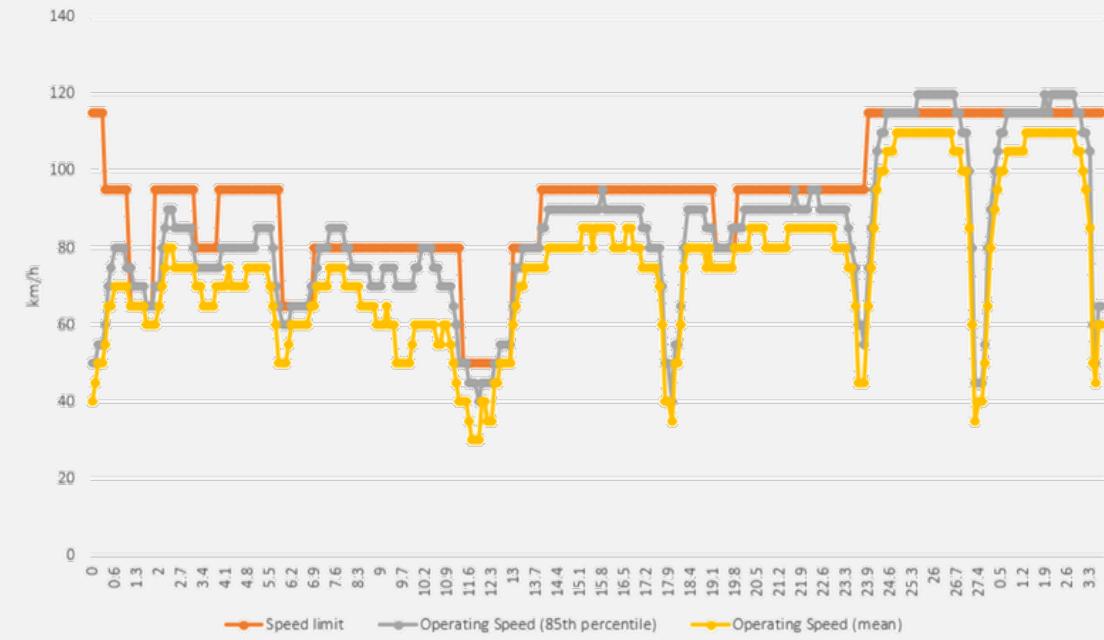
Countermeasure	FSTs saved	BCR	Status
Additional lane (2 + 1 road with barrier)	268	2	Active
Delineation	202	2	✓
Countermeasure 3	76	2	✓
Countermeasure 4	52	5	✓
Countermeasure 5	2	2	✓

Telematics Speed Data

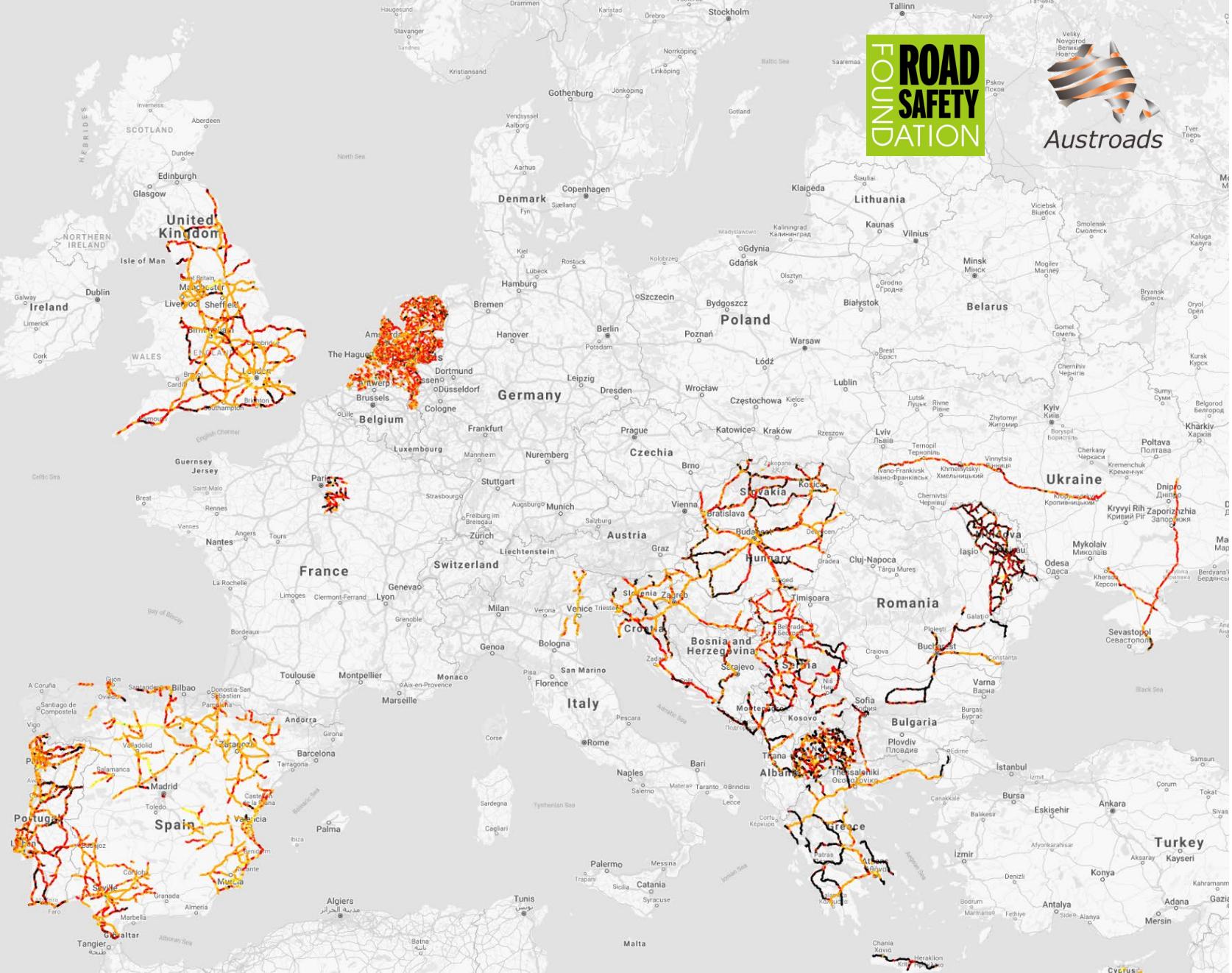
Operating speeds with traditional approach



Operating speeds using telematics



Wider Europe



Celebrating and Sharing Success

John Hardwick



NSW Star Rating



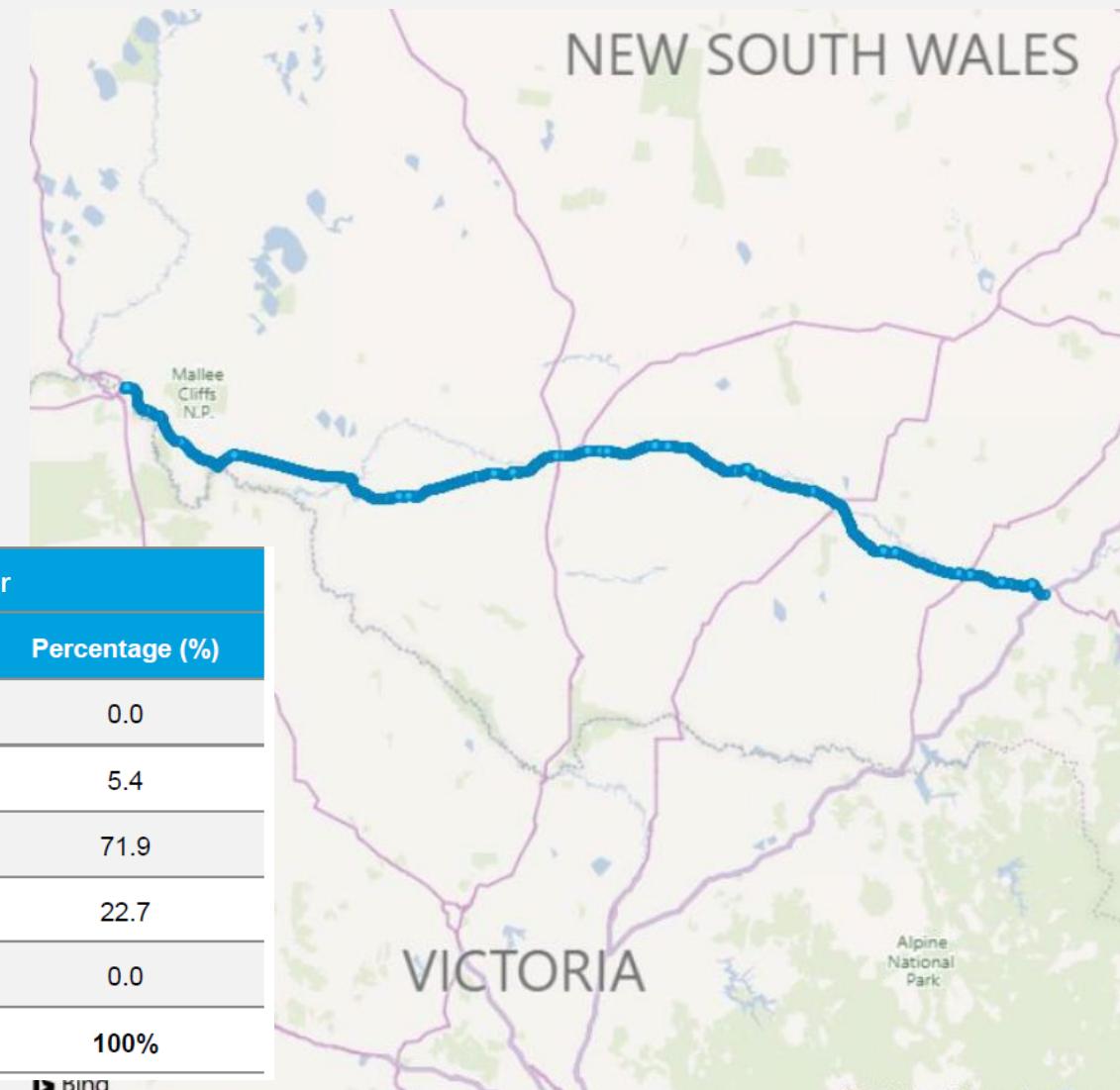
This information is used to prioritise site investigations and help inform options development to improve the road safety infrastructure of the road network.



Sturt Highway (from Hume Highway to Mildura)

600km length project for the whole length

- Key road safety treatments:
- Clear zone improvements
 - Wide centreline
 - Edge drop repair
 - Roadside flexible safety barrier
 - Signage and delineation
 - Audio-tactile line marking
 - Rural gateway treatments



Star Ratings	Before		After	
	Length (km)	Percentage (%)	Length (km)	Percentage (%)
5 Stars	0.0	0.0	0.0	0.0
4 Stars	5.2	0.9	32.2	5.4
3 Stars	330.8	55.0	432.4	71.9
2 Stars	189.7	31.6	136.5	22.7
1 Star	75.4	12.5	0.0	0.0
Totals	601.1	100%	601.1	100%

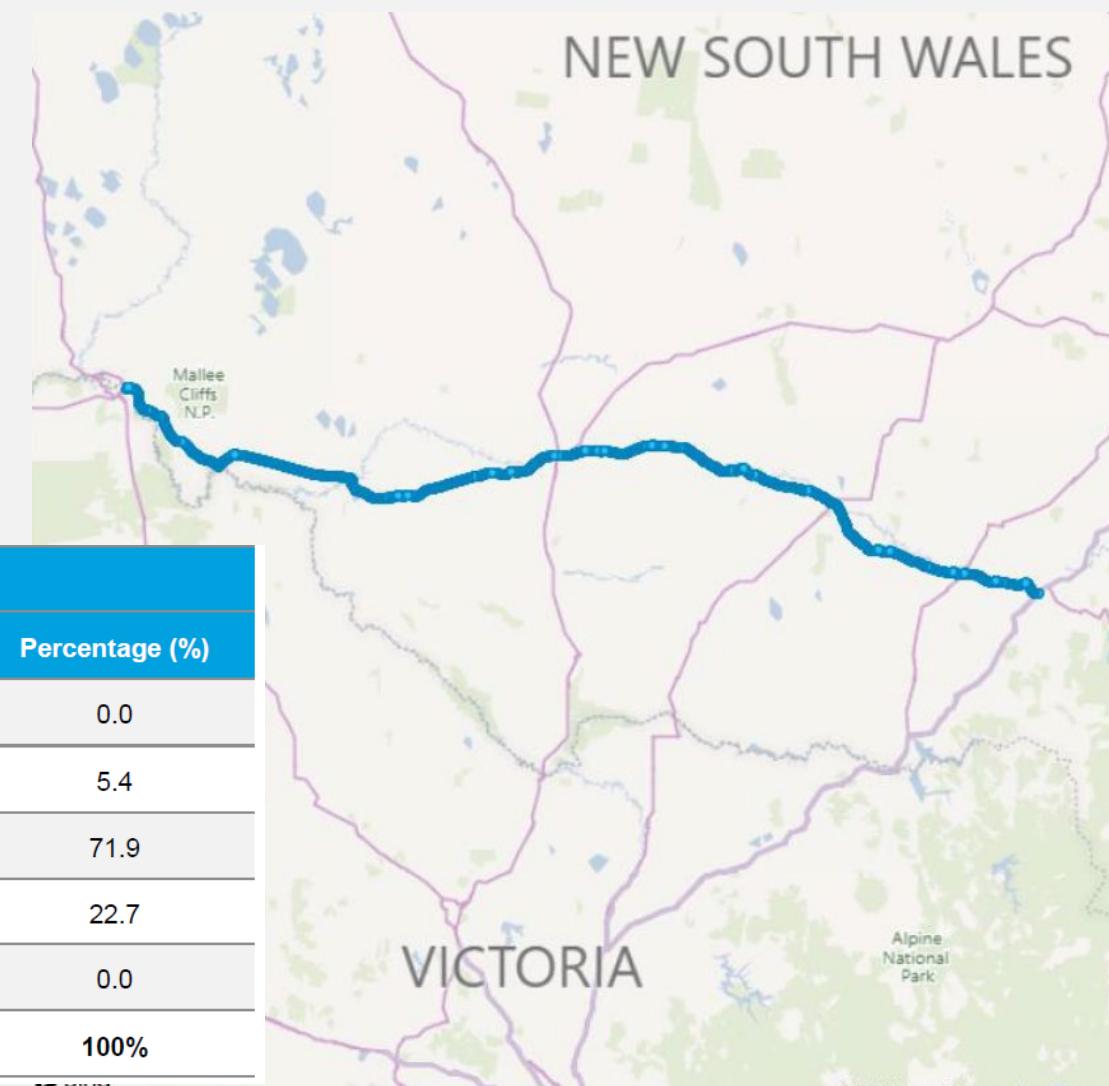
Bing

Burrendong Way – Mitchell Highway to Calula Creek

60km length project

- Intersection upgrades
- Key road safety treatments:
- Signage and delineation
- Roadside flexible safety barrier
- Clear zone improvements
- Audio-tactile line marking for the whole length
- Transverse line marking
- Shoulder widening

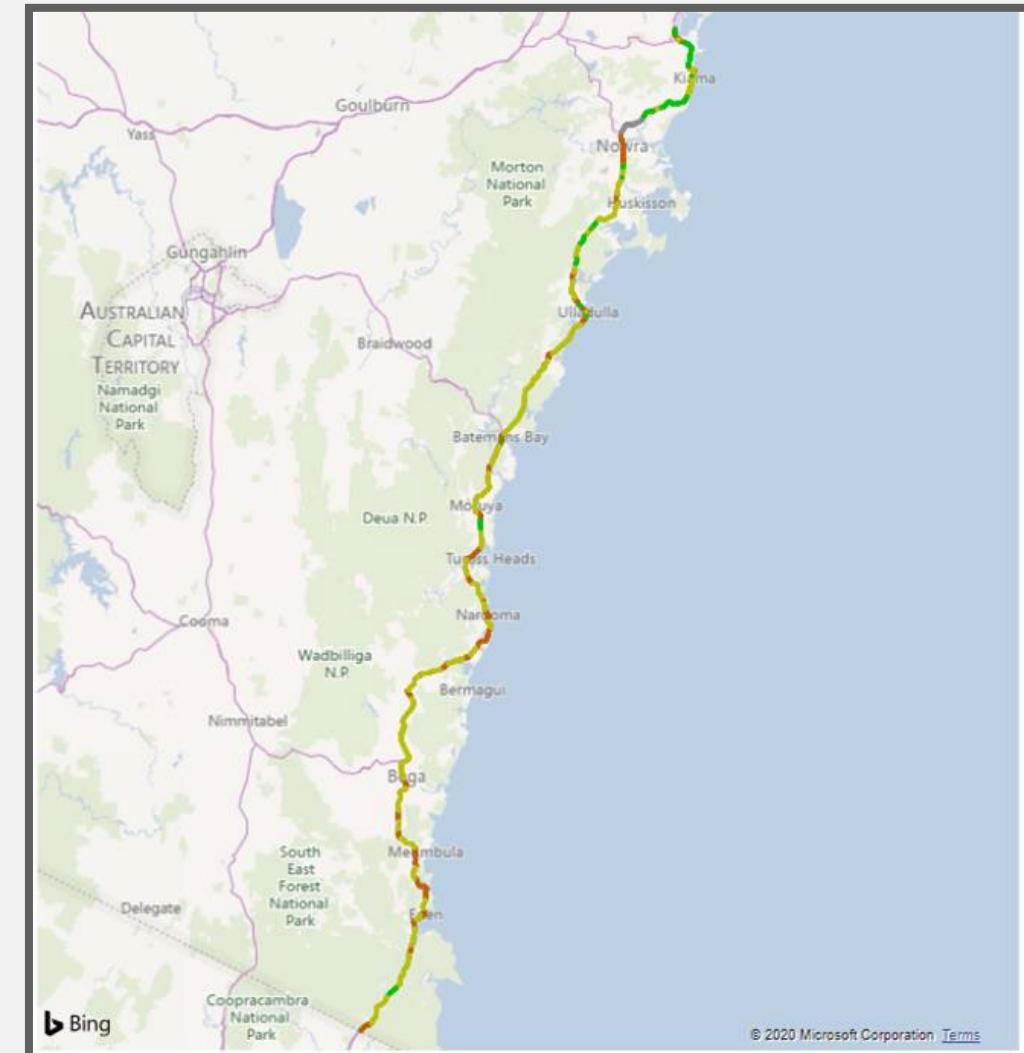
Star Ratings	Before		After	
	Length (km)	Percentage (%)	Length (km)	Percentage (%)
5 Stars	0.0	0.0	0.0	0.0
4 Stars	5.2	0.9	32.2	5.4
3 Stars	330.8	55.0	432.4	71.9
2 Stars	189.7	31.6	136.5	22.7
1 Star	75.4	12.5	0.0	0.0
Totals	601.1	100%	601.1	100%



Princes Highway Corridor Upgrade

- First Safe System Assessments completed on a major project planning and design
- Major safety benefits in the scope of works

Star ratings	BEFORE (current)		AFTER (proposed)	
	km	%	km	%
5 Stars	4.2	0.9	59.4	12.4
4 Stars	79.7	16.6	280.7	58.5
3 Stars	217.5	45.	137.9	28.7
2 Stars	168.8	35.2	2.1	0.4
1 Star	9.9	2.1	0.0	0.0
Totals	480.1	100	480.1	100



Safe System Planning and Design Principle

Figure 1 – Desirable Cross-Section for “Jervis Bay Road to Batemans Bay” section (>12,000 Annual Average Daily Traffic AADT)

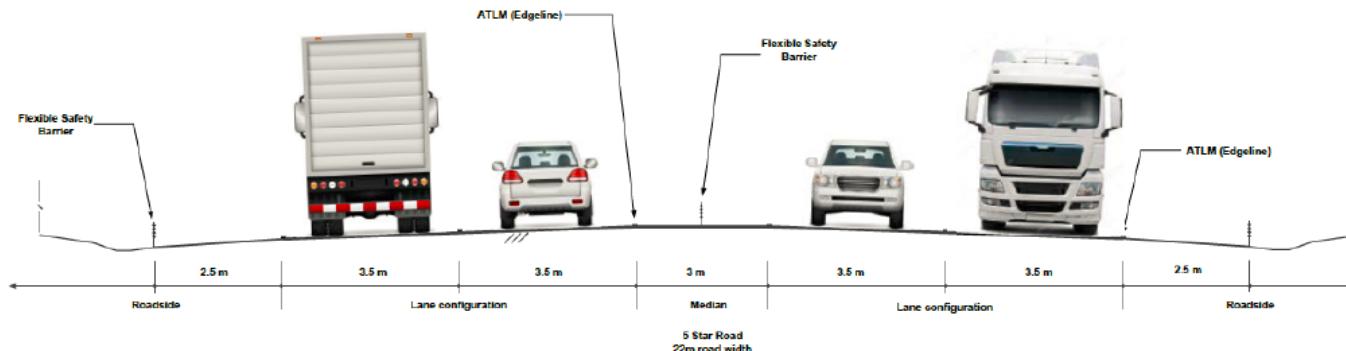
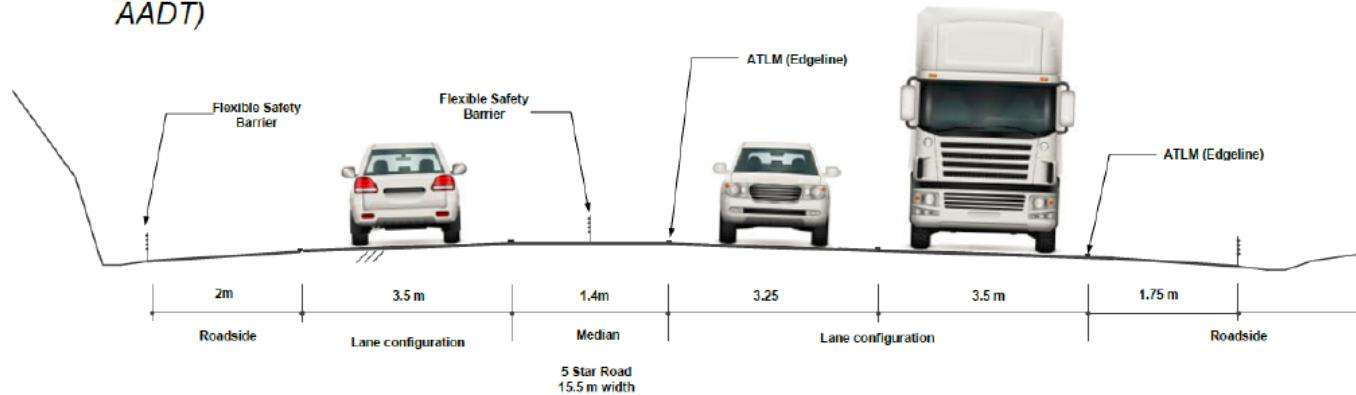


Figure 2 – Desirable Cross-Section for “Batemans Bay to Eden” section (6,000-12,000 AADT)



AusRAP star rating analysis enables prioritisation of infrastructure upgrades at highest-risk locations along the Princes Highway

Safe System Planning and Design Principles maximises the road safety benefit throughout the asset lifecycle once completed

Acknowledgements



From the Princes Highway Upgrade perspective, the involvement of the Centre For Road Safety has been key – offering guidance and expert advice on safe systems approaches to road safety across the development of the Strategic Program Business Case, engagement in the program governance and direct input in project and options workshops. This has ensured that the Program keeps road safety front and centre of our decisions.

Princes Highway Program Director

The level of proactive collaboration, engagement and contribution from CfRS teams members enabled them to be effectively embedded in the PHU team to support and inform the direction of the PHU program to achieve the objectives and desired outcomes for each project.

Princes Highway Lead Project Developer

Additional Projects – Rating of Regional Roads

Star Rating

~19,000kms

Star rating assessment of the regional road network has commenced

18,000kms

Complementing the star rating assessment already completed on the state controlled road network

AiRAP

- New project which leverages readily available commercial and open-source data (e.g. LiDAR, video and satellite data) and automated data analytic techniques (machine learning)
- Proof-of-concept intended to deliver data specifications, compliance and quality assurance processes, to prove the methodologies and provide the framework and confidence levels for AiRAP data generated in NSW
- Final report scheduled for mid-2022

Next Steps for the Australian Road Assessment Program

Michael Nieuwsteeg



Next Steps

- Establish governance
- Developing business plan to deliver effective planning and coordination of activity



More on AusRAP Star Ratings



- Free ITE-ANZ's practitioner seminar on practical aspects of AusRAP star ratings in policy, road investment and safety auditing
- 25 November, 4:30 PM - 6:00 PM (UTC+11)

Register here:

<https://www.trybooking.com/events/landing?eid=827574&>

Gabby O'Neill
Head of National Office
of Road Safety
Federal Government

Mark Ellis
Director - Road Safety Strategy
Implementation and Programs.
Federal Government

Joseph Le
Senior Manager Safer Roads
Transport for NSW

Kenn Beer
Principal Engineer
Safe System Solutions Pty Ltd

Application of Road Star Ratings

Free Online Seminar

25 Nov 2021

Austroads

ausrap.org.au

Upcoming Austroads Webinars



Topic	Date
Guide to Road Tunnels Part 2 update: rationalising network signage for over-height vehicles	2 December
Road authority data for connected and automated vehicles (RADCAV)	9 December
Use of road-grade recycled plastics for sustainable asphalt pavements Part 1	14 December
Use of road-grade recycled plastics for sustainable asphalt pavements Part 2	16 December

Register at: austroads.com.au/webinars-and-events

Sign up for our monthly newsletter to receive alerts: bit.ly/austroadsnewsletter

Thank you for participating!

Watch our webinar recordings when
and where it suits you!

There are more than 100 to choose
from at austroads.com.au/webinars

