



26 August 2021

Mr Tim Mills
Inquiry Secretary
Parliament House, HOBART 7000

Dear Chair and Committee Members

iRAP Submission to Tasmanian Road Safety Inquiry

The [International Road Assessment Programme](#) (iRAP), as a global charity with the vision for a world free of high-risk roads, welcomes the opportunity to provide this submission in response to the Tasmanian Road Safety Inquiry. Austroads leads the local programme in Australia known as AusRAP, working in partnership with the Federal, State and Local Governments, ARRB, Mobility Clubs and other stakeholders to make Australian roads and streets safer.

Firstly I would like to express my sympathy for the 36 people who were killed in 2020 and the 284 Tasmanian's who suffered life-changing injuries last year. The harsh reality is based on these results and a high-level analysis of likely road injuries in Tasmania you can expect 11,160 Tasmanians will be killed or injured in road crashes over the next Decade. 360 mostly young people will be killed, 80 will suffer severe brain injury and a further 662 will have mild brain injuries, 1,578 fractures to the limb, 959 with internal injuries, 132 with spinal injuries and 2,758 soft tissue injuries¹.

In addition to the personal tragedy the financial cost to the Tasmania health system, business, families and economy will be in excess of \$6.3 billion over the next ten years. The solutions to ensure this does not happen are both cost effective and proven and an urgency and scale to your response is essential for the individuals concerned and the economy. There is no trade-off between health and public safety when it comes to investing in safer 3-star or better roads for all road users. They will **save lives, save money and create jobs**.

Your Government is to be commended on the great investment on the Midland Highway to bring this critical corridor to an AusRAP **3-star or better standard**². That same success can be recreated and celebrated across Tasmania with a cost-effective investment in safer roadsides, separation of flows, improved intersections, better provision for pedestrians and cyclists and safer speeds.

I look forward to helping the Government and all the key stakeholders in Tasmania make the most of that win-win-win investment for the benefit of all Tasmanians as part of your AusRAP programme.

Yours sincerely

Rob McNerney
CEO, iRAP

¹ <https://www.vaccinesforroads.org/human-impact/> adapted for Tasmanian data

² https://www.midlandhighway.tas.gov.au/about_the_action_plan

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Introduction and background <https://www.irap.org/>

iRAP is a UK registered global charity with the vision for a world free of high-risk roads. The charity provides the global standard for infrastructure safety performance monitoring as recommended by WHO Member States, UN agencies, the International Transport Forum of the OECD, Global Infrastructure Hub, the World Bank, European Investment Bank and other national governments and multi-lateral development agencies. The specifications, systems and supporting software are provided in a free-to-air environment for all partners to use. Global partners contribute to the continuous enhancement and improvement of the programme for the mutual benefit of all partners.

The AusRAP programme in Australia has been active since 2004 and was the first RAP programme outside Europe. The programme is currently governed by an MOU agreement between the Australian State, Territory and Local Government road agencies represented by Austroads, ARRB, AAA and iRAP. Austroads research has helped underpin the global evidence base used in the models and the formal transition to Austroads programme leadership will be announced shortly.

Tasmanian and Australian experts have also helped shape the global programme that now reaches 100+ countries, 1,000,000km+ of roads and has made over A\$100 billion of road investment safer worldwide from school entrances to major freeways and toll-roads.



Key Recommendations

A summary of key recommendations for the Inquiry to consider:

1. Formally establish an AusRAP leadership team in Tasmania (Department of State Growth, Transport Tasmania, LGA Tasmania, Tasmania Police, MAIB, RACT, ARRB and others) and contribute to the national programme chaired by Austroads.
2. Produce and publish the AusRAP Crash Risk Maps on an annual basis for all roads across the State (refer UK example).
3. Publish Star Rating assessments on the state highway network and commit to re-assessments every 3-5 years to monitor performance and set the priorities for the following 5 years (refer EU legislation).
4. Set ambitious and achievable % of travel Star Rating targets for 2025 and 2030 for the State (e.g. 90% of travel at 3-star or better) that meet and ideally exceed those set in the National Road Safety Strategy (to be published later this year).
5. Commit to the regular assessment and publication of Star Ratings on higher-volume local government roads and where crash rates are high and very high (based on the AusRAP Risk Maps) with associated targeted investment in upgrades to and ensure state-wide 3-star or better targets are met for each road user group (pedestrians, cyclists, motorcyclists and vehicle occupants).
6. Require the before and after Star Rating of all new road and transport infrastructure to be reported along with an estimate of the deaths and injuries and associated costs likely over the effective life of the treatment.
7. Set appropriate Star Rating performance targets for all new and upgraded road and transport infrastructure (e.g. 4-star or better for state highways; 4-star or better for pedestrians and cyclists around schools, town centres).
8. Development a long-term results-based Investment Plan that optimises the investment in infrastructure solutions and associated speed management activities to reach the Star Rating targets by 2025 and 2030.
9. Spot Star Ratings completed at crash scenes to better inform safe system outcomes and discussions with the community to reinforce that some roads are safer than others and due care is needed.
10. Work with MAIB to model the claim costs and injury types alongside the AusRAP Risk Mapping and Star Rating data to inform future high-return investments (e.g. Severe brain injury rates on 1-star versus 4-star roads and where to invest).

AusRAP Outputs & Partnerships

The AusRAP Programme began in Victoria in 2004 (the first programme outside of Europe) and has now extended to every State and Territory with more than 300,000km of assessments completed by State and Local Government Agencies, Motoring Clubs, Austroads and ARRB. The partnership benefits from, and contributes to, the global iRAP partnerships that are in place in over 100 countries worldwide. Examples of AusRAP partner activity in Australia are provided below.

One major opportunity that remains for the Government in Tasmania is to “ribbon-cut” the 3-star and better road upgrades along the Midlands Highway and celebrate the achievements of all the partners working on the project over the 10 year plan. New Risk Mapping results should also demonstrate improvements that should be celebrated.



Midland Highway 10 Year Action Plan
About the action plan

We're taking action to improve safety on the Midland Highway

The Midland Highway 10 Year Action Plan sets out the Australian and Tasmanian governments' key priorities for investing \$500 million over 10 years to upgrade the highway and improve road safety and save lives on Tasmania's key north-south freight route. We will improve road safety and decrease driver frustration by providing a safer road with more overtaking opportunities.

We'll do this by delivering a 3-star safety rating for the Midland Highway

The objective of our 10 year investment in the Midland Highway is to deliver a minimum 3-star rating for the highway's entire length. The Australian Road Assessment Program (AusRAP) is part of the International Road Assessment Program (iRAP) that uses star ratings to measure the safety of a road's infrastructure. Each road is assigned a star rating which tells us how safe the road itself is and allows road safety improvements to be identified and coded. The AusRAP Star Rating Australia's National Network of Highways 2013 report found that the majority of the Midland Highway rated either 1 or 2-star, in its 5-star safety rating scale.

How will we achieve a 3-star rating?

We are using the Safe System approach, which has been adopted by all Australian states and territory road authorities. This approach recognises that people will make mistakes which result in crashes, and road infrastructure needs to be designed to take account of these errors. For most of the Midland Highway, the predominant crash type is loss of control, most of which are single vehicle crashes with some resulting in head-on crashes and fatalities. 60% of the fatalities on the highway have been due to head-on crashes. To achieve a 3 star safety rating, a number of road treatments can be applied.

Safe System
In memory of the lives lost in Tasmania, 350 people injured in the last 10 years

Flexible barrier saves lives

Melba Highway barrier

More information is available here.

Business opportunities
Contractors interested in tendering for upcoming road safety projects are encouraged to check out the Tasmanian Government's tenders site.

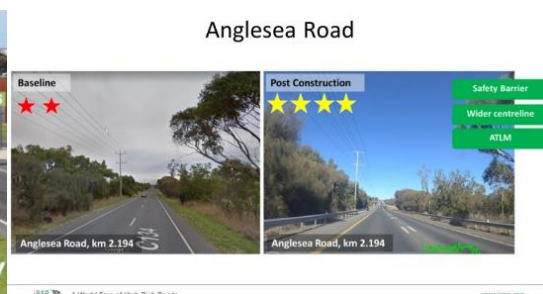
[Midlands Highway](#) success story



AusRAP Risk Mapping 2016



RACV led assessments (Victoria)



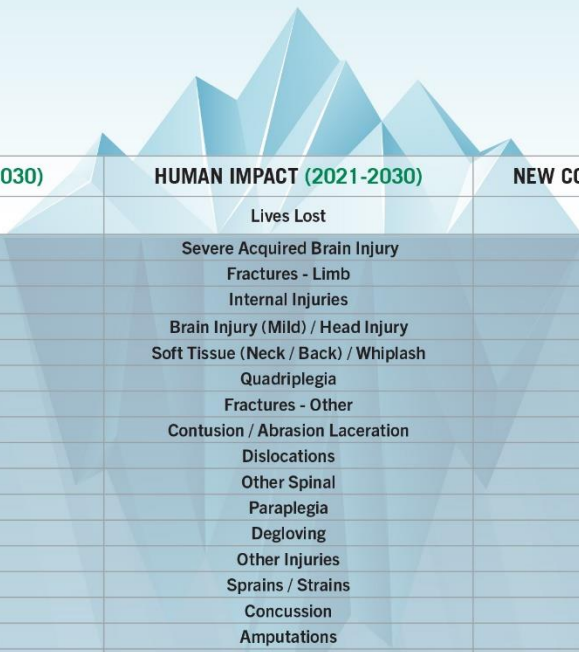
VicRoads and TAC led analysis

The human impact of road trauma in Tasmania

iRAP believe that a lack of visibility of the true human impact of road crashes has created the apathy and under-investment we have seen to date. Shining a spotlight on the true impact of road trauma has been a focus of the charity, and partnerships with organisations like MAIB can allow that to happen.

The [Vaccines for Roads](#) resource has been designed to support this discussion and demonstrate that fatalities are just the tip of the iceberg. The data is now being used by iRAP, the World Bank, International Finance Corporation and FIA to drive pension fund and private-sector investment in road safety impact bonds and Impact Investment to save lives worldwide. A projection of the likely injury burden in Tasmania over the next ten years (based on 2020 outcomes) is shown below.

The likely Human and Financial Impact in Tasmania over the next 10 years



The background of the table features a large, stylized iceberg graphic. The iceberg is composed of several blue triangular facets, with the top portion above the waterline and the larger, submerged portion below. The waterline is represented by the top of the table's data rows.

NEW VICTIMS (2021-2030)	HUMAN IMPACT (2021-2030)	NEW COSTS (2021-2030) (AUD)
360	Lives Lost	\$ 1,803,514,599
80	Severe Acquired Brain Injury	\$ 1,214,611,873
1,578	Fractures - Limb	\$ 772,934,827
959	Internal Injuries	\$ 625,709,146
662	Brain Injury (Mild) / Head Injury	\$ 478,483,465
2,758	Soft Tissue (Neck / Back) / Whiplash	\$ 358,494,535
5	Quadriplegia	\$ 220,470,458
701	Fractures - Other	\$ 217,525,944
1,999	Contusion / Abrasion Laceration	\$ 125,509,893
220	Dislocations	\$ 112,995,711
119	Other Spinal	\$ 102,689,913
8	Paraplegia	\$ 94,592,499
86	Degloving	\$ 59,626,401
970	Other Injuries	\$ 65,515,428
386	Sprains / Strains	\$ 40,118,998
238	Concussion	\$ 25,028,365
11	Amputations	\$ 14,722,567
15	Burns (Severe / Moderate)	\$ 5,889,027
3	Nerve Damage	\$ 1,472,256
1	Loss Of Sight / Eyes	\$ 368,063
11,160	TOTAL	\$ 6.34 BILLION

<https://www.vaccinesforroads.org/global-impact-of-injuries/>




The personal impact of road trauma

The human impact of road trauma is also personal.....Thanks to the TAC in Victoria and other global partners the true personal impact of road trauma has been able to be shared - because every life counts!


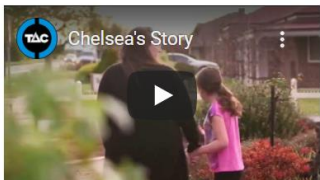
<https://www.vaccinesforroads.org/human-impact/>

<http://www.tac.vic.gov.au/road-safety/statistics/online-crash-database/irap-road-injury-dashboard>

Limb Fractures

Julie	Bridget	Ken
<p>"I don't mind if I can't move it that well I just want to keep my leg". Julie was in an induced coma for eight days after her head-on crash left her trapped in the vehicle. "Every part of my limb has been rebuilt"</p>	<p>"...who is going to take care of my family? My children need me. How will I go to work?" Bridget was run over trying to cross the road as a pedestrian.</p>	<p>"Why did it happen to me?" Ken considered self-harm after being struck by a car while on his bicycle crash on a rural road. With help, he is positive and things are working again.</p>
		
<p>How Safe? ...are undivided roads and provision for active road users.</p>	<p>7,620,000 Limb Fractures a year worldwide. How many in your country?</p>	<p>Business Case - The win-win investment in divided roads and cycle lanes.</p>

<https://www.vaccinesforroads.org/human-impact/>

Micaela	Chelsea
<p>"There are so many hard days" Micaela has had to choose a different path for her life after a run-off road crash into a tree.</p>	<p>"For the first month they weren't sure if she'd survive" Chelsea was 5 year's old when she was hit by a 4WD and left with a severe brain injury. Chelsea's Mum Susie immediately finished working to care for Chelsea and is always proud of her progress.</p>
	
<p>How Safe? ...are our roadsides and provision for pedestrians.</p>	<p>340,000 Severe Brain Injuries a year worldwide. How many in your country?</p>

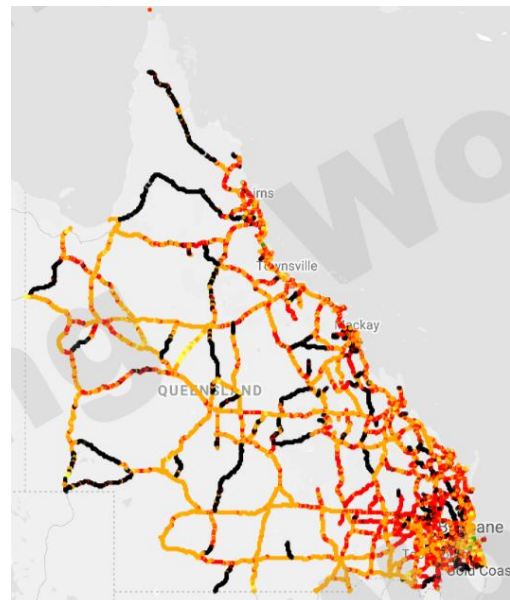
AusRAP - Australian Inspiration



NATIONAL ROAD SAFETY ACTION PLAN 2018-2020

2	Target infrastructure funding towards safety-focused initiatives to reduce trauma on regional roads	Commonwealth States and territories Local government	3, A, B
<p>Why Australia has many high speed regional roads that are key routes and where crash risk is high. There were 843 people killed on regional and remote roads in 2016, representing 65% of all road crash deaths.</p> <p>Outcome by 2020 Increase safety treatments on roads with highest risk of death and injury. Actions 2 and 3 (together with A and B) collectively aim to improve the star ratings across the whole road network, with the aim to achieve 3-star AusRAP ratings or better for 80% of travel on state roads, including a minimum of 90% of travel on national highways.</p> <p>Implementation The Commonwealth, states and territories, and local governments will work together to develop and deliver regional road safety initiatives within infrastructure investment frameworks.</p> <ul style="list-style-type: none"> Upgrades to start with corridors/routes with the highest death and serious injury risk. Apply mass action treatments (e.g. barriers, wide medians, audio-tactile line markings) for state and local roads with the highest risk of fatality and serious injury. Accelerate and/or redirect funding to focus on highly beneficial mass action treatments as part of the delivery of funded infrastructure programs/projects, and use pilot projects to demonstrate the benefits to the community. 			

6 NATIONAL ROAD SAFETY ACTION PLAN 2018-2020

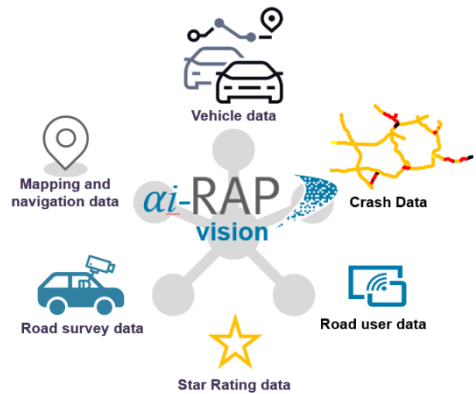
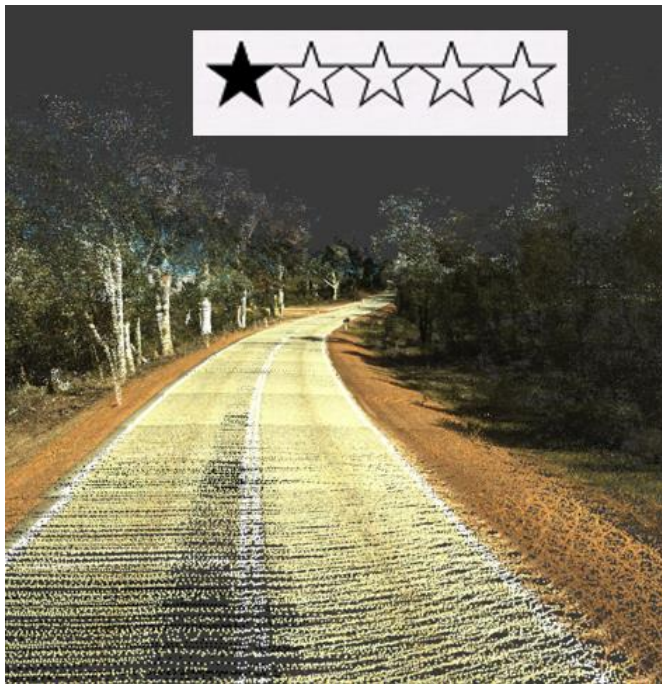


National Star Rating Policy Targets – TIC

Statewide Vehicle Star Ratings – TMR

Safer Roads Investment Plan ?						
Currency: \$ AUD - Analysis Period: 20 years						
Total FSIs Saved	Total PV of Safety Benefits	Estimated Cost	Cost per FSI saved	Program BCR		
2,081	1,188,575,999	545,419,964	262,081	2		
Countermeasure	Length / Sites	FSIs saved	PV of safety benefit	Estimated Cost	Cost per FSI saved	Program BCR
Skid Resistance (paved road)	350.80 km	465	265,521,877	88,391,771	190,126	3
Roadside barriers - driver side	517.60 km	446	254,859,407	154,110,837	345,353	2
Clear roadside hazards - driver side	1,051.40 km	265	151,258,133	40,177,539	151,704	4
Clear roadside hazards - passenger side	1,005.90 km	233	133,210,531	38,213,379	168,835	3
Roadside barriers - passenger side	331.10 km	231	131,838,019	100,211,814	434,120	1
Central median barrier (no duplication)	10.80 km	72	41,337,737	6,739,287	93,110	6
Central hatching	159.60 km	65	36,935,005	20,933,486	323,694	2
Shoulder rumble strips	125.30 km	48	26,331,870	18,600,522	403,436	1
Central median barrier (1+1)	15.10 km	46	26,131,740	16,679,034	364,530	2
Traffic calming	47.50 km	45	25,788,313	12,219,598	270,801	2
Protected turn lane (unsignalised 4 leg)	72 sites	36	20,506,835	6,425,992	178,185	3
Improve Delineation	156.50 km	34	19,628,995	7,516,728	218,707	3
Footpath provision driver side (adjacent to road)	48.20 km	18	10,104,789	6,506,884	367,770	2

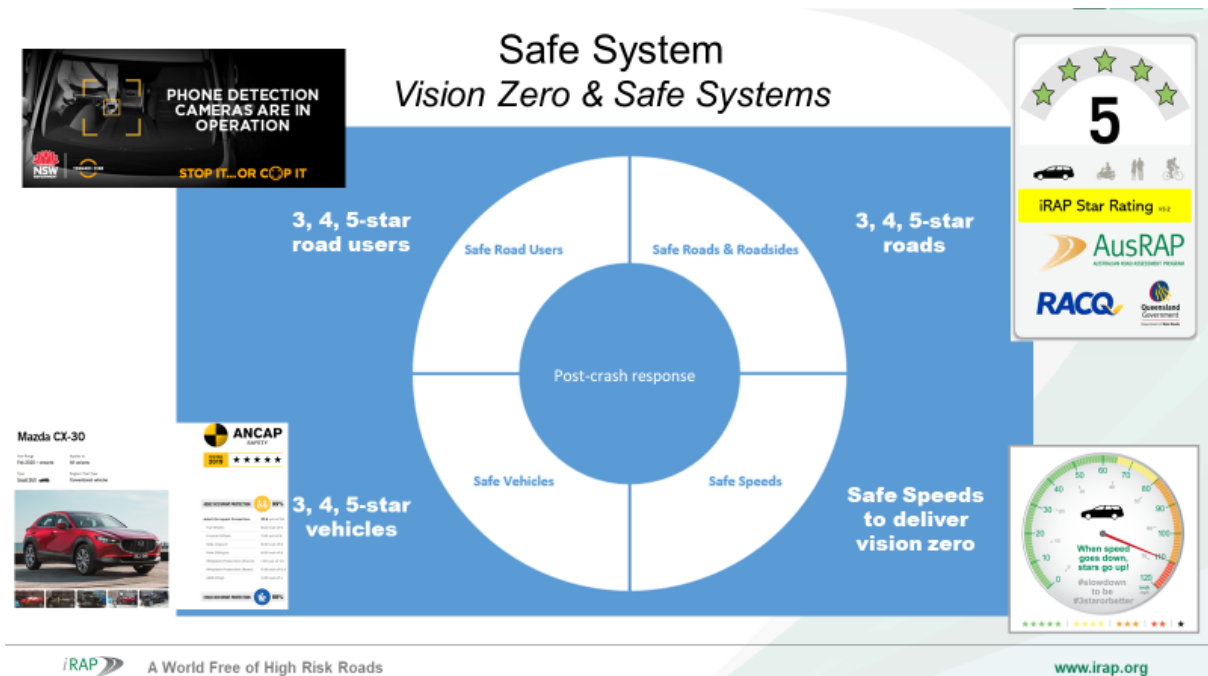
Safer Roads Investment Plans



Global first Ai-RAP Partnership to use big data and artificial intelligence to generate low-cost, scalable RAP data underway with MRWA, Transport for NSW and the iMove CRC will support AusRAP KPI measures

LiDAR Data and AiRAP data collection (TomTom / Anditi)

Safe System Opportunities – 5-star users on 5-star roads in 5-star vehicles

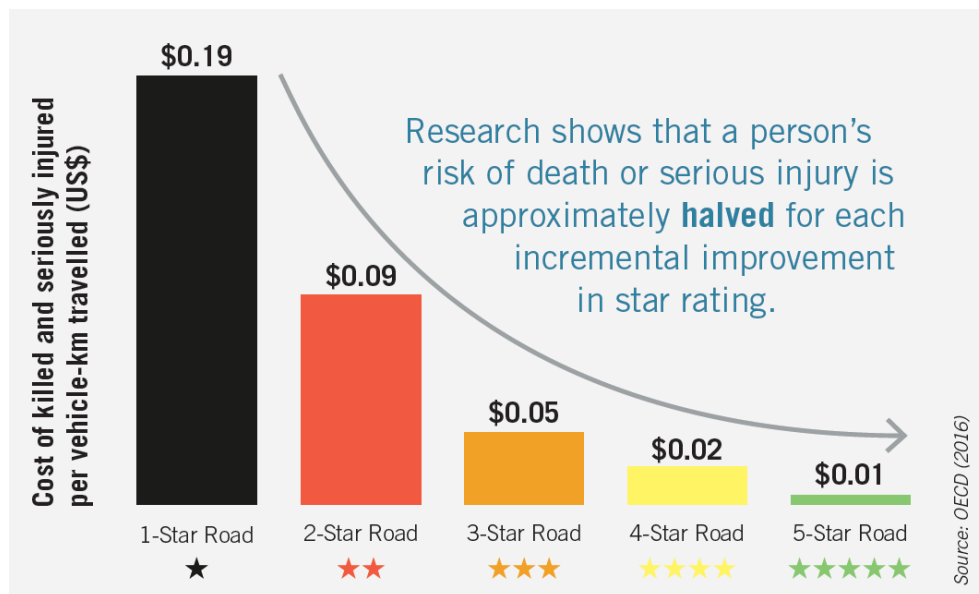


iRAP and Inspiration from the world

<https://www.vaccinesforroads.org/case-studies-of-success/>

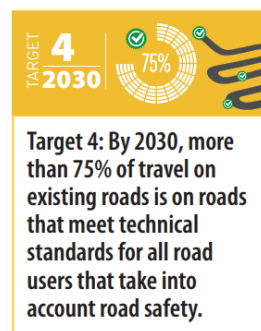
OECD

The relationship between Star Ratings and crash costs per kilometre travelled



<https://www.oecd.org/publications/zero-road-deaths-and-serious-injuries-9789282108055-en.htm>

UN agreed minimum Star Rating Standards for new and existing roads



[Member State agreed Global Road Safety Performance Targets](https://www.who.int/roadsafety/publications/en/)

<https://www.who.int/roadsafety/publications/en/>

Global Innovation

Within the safe system context iRAP is working with the European Union and other partners to ensure the combined performance of new driver assistance technologies, vehicle safety standards, road design standards and technology / ITS deployment are implemented to minimise the occurrence of death and injury. For further details see <https://eurorap.org/slain-project/>.

A range of Global Innovation partnerships are also underway <https://irap.org/innovation/> and the free 2021 iRAP Innovation Workshop will be held on October 7 and 14 with the Inquiry members very welcome to attend <https://irap.org/2021/08/registration-open-2021-innovation-workshop-with-regional-road-safety-observatories-data-driven-innovation-to-save-lives/>

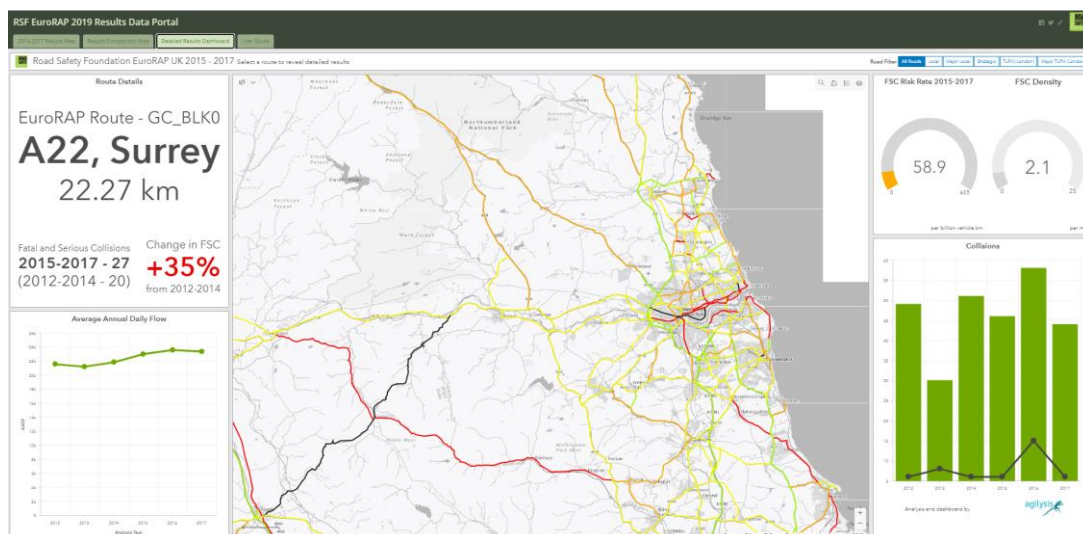


Annual Risk Maps and Performance Tracking

Ready examples of the annual risk mapping approach are available from countries like the UK and Spain and highlight the potential of this approach to support transparent performance tracking. This can ensure success can be celebrated when high -risk roads become low-risk – and also to continuously target any persistently high-risk roads.

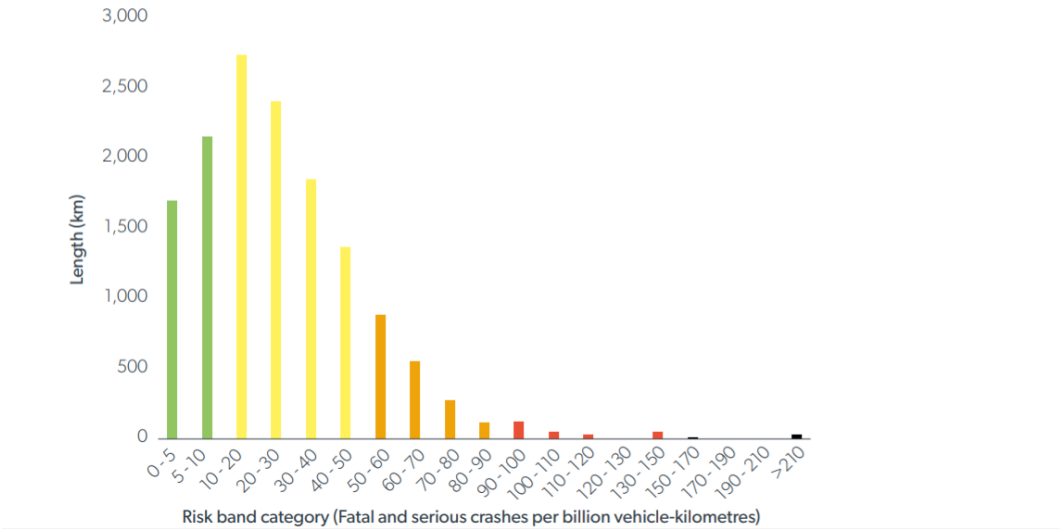
Refer to the following overseas examples for more information:

- <https://roadsafetyfoundation.org/building-back-safer-2/>
- <https://eurorap.org/wp-content/uploads/2020/01/20170608-5-EuroRAP-in-Spain-L-Puerto.pdf>
- http://www.kiwirap.org.nz/risk_maps.html



[EuroRAP UK Risk Mapping Dashboard](#)

FIGURE 1: RISK RATE DISTRIBUTION FOR ENGLISH SRN AND MRN COMBINED (TOP), SCOTTISH STRATEGIC ROADS (MIDDLE) AND WELSH STRATEGIC ROADS (BOTTOM)⁷



Risk Distribution per billion kilometre travelled ([UK](#))

FIGURE 3: PERCENTAGE OF TRAVEL ON SECTIONS WITH HIGH-LOW RISK BANDINGS BY ROAD TYPE

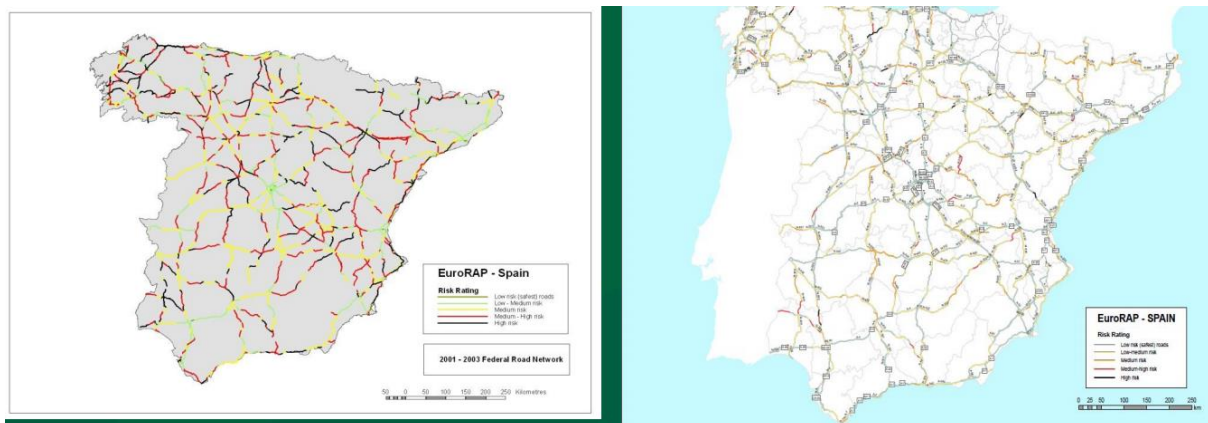


% of travel on low to high crash rates by road type ([UK](#))

Table 1: Most improved road links

Site Name	Region	07-11 Crashes					12-16 Crashes					Difference in F+S
		Fatal	Serious	F+S	Collective Risk Band	Personal Risk Band	Fatal	Serious	F+S	Collective Risk Band	Personal Risk Band	
SH 1 from Kaikoura to Waipara	Canterbury	5	46	51	Medium	Medium-High	7	23	30	Low-Medium	Low-Medium	-21
SH 77 from Ashburton to Darfield	Canterbury	6	21	27	Low-Medium	High	1	5	6	Low	Low	-21
SH 2 from Takapau to Hastings	Hawke's Bay/ Manawatu-Whanganui	10	29	39	Medium-High	Medium	6	13	19	Low-Medium	Low	-20
SH 2 from Featherston to Upper Hutt	Wellington	2	32	34	High	High	3	13	16	Medium-High	Medium	-18
SH 2 from Takapau to Woodville	Manawatu-Whanganui	6	20	26	Medium	Medium	1	10	11	Low-Medium	Low	-15
SH 1 from Timaru to Oamaru	Canterbury/Otago	10	20	30	Medium	Low-Medium	6	9	15	Low-Medium	Low	-15
SH 1 from Warkworth to Wellsford	Auckland	9	17	26	High	Medium-High	2	11	13	Medium-High	Low-Medium	-13

Performance Tracking ([KiwiRAP](#))



[Spanish Risk Maps](#) – the improvement from 2004 – 2014

Star Rating for Schools

If we can make a road safe for a child it is safe for everyone.

Together with global partners like FIA Foundation, FedEx, 3M, UNICEF, FIA clubs like RACT and others, iRAP is supporting the global application of Star Rating for Schools.

<https://www.starratingforschools.org/>



NEW SR4S CASE STUDY: TRAX India

Aug 25, 2020

SR4S CASE STUDY: TRAX INDIA Road Safety & Juniors - Paving the way for a safer tomorrow Government of Haryana, MG Motor and TRAX are developing a safer culture around schools through road upgrades, research and training involving students, teachers and the...

[read more](#)



SR4S newsletter now available – July 2020 Edition

Jul 31, 2020

The latest Star Rating for Schools newsletter is out now - read some great stories of how SR4S Lead Partners are engaging partners and leading safer infrastructures around the world. This edition features: Reshaping spaces for pedestrians now and after COVID-19...

[read more](#)



YOURS is leading the youth to improve road safety globally

Jul 27, 2020

The Global Youth Coalition for Road Safety, initiated by YOURS, has been launched, opening a path for global youth engagement on road safety actions. During an online ceremony held in July 2020, the young leaders to be part of the Youth Advisory Board have been...

[read more](#)

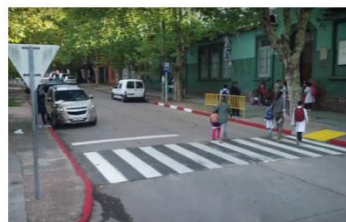


AIP Foundation scales up success of school zone upgrades in HCMC and Pleiku City

Jul 27, 2020

Following on from the success of the four school zones upgraded in Ho Chi Minh City as part of the Walk This Way programme, and the two school zones improved in Pleiku City through the Slow Zones, Safe Zones programme, both supported by SR4S, the AIP Foundation is now...

[read more](#)



Gonzalo Rodriguez Foundation engages governments on the road safety agenda through webinar series

Jul 27, 2020

Given the circumstances of COVID19 experienced around the world, the Gonzalo Rodríguez Foundation launched a cycle of webinars on different aspects of children's road safety. One of these webinars, 'Entornos Escolares Seguros (Safe School Environments)' featured the...

[read more](#)



Thiago Gonzaga Foundation engages youth on the road safety agenda

Jul 27, 2020

Thiago Gonzaga Foundation (Vida Urgente), Global Alliance member, has been working to engage the youth on the road safety agenda. Volunteers from Vida Urgente attended the SR4S webinar delivered in April 2020 and have been trained on the SR4S methodology, getting...

[read more](#)

Australian International Partnerships

iRAP is already actively supporting the Global Infrastructure Hub and also DFAT with positive economic, aid and trade related activities including but not limited to:

- The G20 Quality Infrastructure guidance
- The Australia-India Infrastructure Council
- Road infrastructure safety in Vietnam
- AusRAP and IndiaRAP twinning partnerships

This could be actively expanded with PacificRAP and AusRAP partnerships to deliver 3-star and better roads across the Pacific; Integrating the IndonesiaRAP development in Indonesia with the KIAT activities and the IndiaRAP and AusRAP twinning expansion for industry level cooperation and partnerships.

Appendix A: Road Infrastructure Key Performance Indicators using the iRAP Global Standard

The following pages outline the global Safer Roads / Road Infrastructure KPIs recommended for use globally as part of the iRAP Global Standard and the UN Global Road Safety Performance Targets. This work is informing target and KPI setting across Europe and worldwide through the Regional Road Safety Observatories in Latin America, Africa and Asia. Global alignment on these KPIs will also ensure AiRAP initiatives to ensure big-data approaches to streamline data collection is immediately available for all partners to benefit from in Tasmania and Australia-wide.

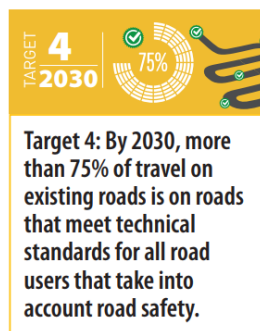
The approach will also allow simple benchmarking with other countries (e.g. performance of Australian motorways versus French, Spanish and UK Motorways; pedestrian star ratings in inner CBD areas comparing Stockholm versus Hobart and Launceston) or internally comparing Midlands Highway versus Bass Highway for vehicles and Bruny Island, Devonport and the City Sights route in Launceston for pedestrians and cyclists. Can Hobart be the first 5-star city for pedestrians in Australia?

Road Infrastructure Key Performance Indicators using the iRAP Global Standard

Harmonisation of road safety data is a major focus of all stakeholders across the world. This includes fatality and injury data; road infrastructure performance data; vehicle performance data; road user behaviour data; and post-crash response data.

The recommended road infrastructure Key Performance Indicators (KPI's) will ensure harmonised collection of data in support of the following:

- the [United Nations Sustainable Development Goals](#)
- the [12 Global Road Safety Performance Targets](#) agreed by Member States;
- the [EU RISM Directive](#);
- the [Regional Road Safety Observatories](#);
- [WHO Global Status Report on Road Safety](#);
- the [Sum4All initiative](#); and
- policies and strategies set by Governments, development organisations, donors and NGOs worldwide.



[Member State agreed Global Road Safety Performance Targets](#)

<https://www.who.int/roadsafety/publications/en/>

About iRAP

iRAP is a registered charity. The iRAP specifications, methodologies and software provide the global standard with all resources published in the public domain for free use by partners globally (<https://www.irap.org/resources/>). The iRAP methodologies are overseen by an independent [Global Policy Advisory Committee and Global Technical Committee](#), and are supported with training courses and an accreditation scheme for partners and suppliers worldwide.

The iRAP Global Standard

iRAP methodologies have been applied by partners in more than 100 countries across more than 1 million kilometres of road. These safety assessments are informing more than US\$75 billion of road investment and provide harmonised road infrastructure KPI's for the mutual benefit of all stakeholders worldwide. Local ownership and application of the iRAP Global Standard is encouraged and supported in every country. To date, more than 25,000 people have participated in training, workshops and presentations on iRAP content.

The global iRAP standard provides numerous benefits including:

- an objective, evidence-based approach to assessing infrastructure related risk that all jurisdictions and stakeholders can access;
- a way to benchmark performance between jurisdictions and road classes;
- a mechanism to fast-track safety assessments through innovative initiatives such as linkages to road asset data; [Ai-RAP](#) and the [light data methodology](#); and
- alignment with the UN, WHO, EU, PIARC and multi-lateral development bank policies and recommendations.

Achieving UN Targets 3 and 4 by 2030 will mean



To understand what achieving the KPIs would mean for your country, see iRAP's [Business Case for Safer Roads](#).

For more information

- To learn more about iRAP and its global programmes and activities, visit irap.org
- To apply the Step by Step Approach to Safer Roads with the KPIs providing the confidence to invest and the metrics to measure success, visit vaccinesforroads.org/take-action/
- To understand the human impact of road crashes, how safe the world's roads are and what is possible for your country – in terms of fatal and serious injuries prevented and economic savings that could be achieved by maximising the percentage of travel on 3-star or better roads by 2030 - explore iRAP's Big Data Tool at vaccinesforroads.org
- To learn about or establish an iRAP programme in your country or state, contact your local representative by visiting the where we work map at irap.org/about-us/
- For details on iRAP's protocols and how to apply them to your infrastructure projects, visit irap.org/how-we-can-help/
- For training to support achieving the KPIs, visit irap.org/training/

GLOBAL ROAD INFRASTRUCTURE KEY PERFORMANCE INDICATORS (KPI'S) – EXISTING ROADS

Crash Data

iRAP Global Standard	Protocol / Attribute	Primary KPI	Current Global Performance	2030 Target	Extended Metrics (with primary performance measure in bold)
Crash Risk Mapping	Collective Crash Risk Maps	Percentage of road length with < XXX fatal and serious crashes per kilometre per year		To be set by jurisdiction	% in each category (low, low-medium , medium, medium-high and high risk)
Crash Risk Mapping	Individual Crash Risk Maps	Percentage of road length with < XXX fatal and serious crashes per billion vehicle kilometres travelled		To be set by jurisdiction	% in each category (low, low-medium , medium, medium-high and high risk)

Infrastructure and Speed Management for existing roads ([Global Road Safety Performance Target 4](#))

iRAP Global Standard	Protocol / Attribute	Primary KPI (Refer https://www.vaccinesforroads.org/ for sample of global and national performance)	Current Global Performance	2030 Target	Extended Metrics (with primary performance measure in bold)
Star Rating	Pedestrian Star Rating	Percentage of travel on 3-star or better roads for pedestrians	12 %	>75%	% of length and % of travel in each category (5-star, 4-star, 3-star , 2-star, 1-star)
Star Rating	Bicyclist Star Rating	Percentage of travel on 3-star or better roads for cyclists	14 %	>75%	% of length and % of travel in each category (5-star, 4-star, 3-star , 2-star, 1-star)
Star Rating	Motorcyclist Star Rating	Percentage of travel on 3-star or better roads for motorcyclists	33 %	>75%	% of length and % of travel in each category (5-star, 4-star, 3-star , 2-star, 1-star)
Star Rating	Vehicle Occupant Star Rating	Percentage of travel on 3-star or better roads for vehicle occupants	56 %	>75%	% of length and % of travel in each category (5-star, 4-star, 3-star , 2-star, 1-star)

INFRASTRUCTURE ATTRIBUTE PERFORMANCE KPIS – BY ROAD LENGTH*

iRAP Global Standard	Protocol / Attribute	Primary KPI (Refer https://www.vaccinesforroads.org/ for sample of global and national performance)	Current Global Performance	2030 Target
iRAP Coding Manual	Sidewalk; Operating Speed	Percentage of roads where pedestrians are present and traffic flows at 40km/h (25mph) or more have formal footpaths or sidewalks	15%	To be set by jurisdictions
iRAP Coding Manual	Pedestrian crossing – inspected road; Operating Speed	Percentage of roads where pedestrians cross and traffic flows at 40km/h (25mph) or more have pedestrian crossing facilities	8%	
iRAP Coding Manual	Pedestrian crossing quality; Operating Speed	Percentage of pedestrian crossings that are adequately signed or maintained	88%	
iRAP Coding Manual	Facilities for motorised two wheelers; Operating Speed	Percentage of roads where motorcyclists are present and traffic flows at 60km/h (40mph) or more have dedicated motorcycle facilities	1%	
iRAP Coding Manual	Bicycle facility; Operating Speed	Percentage of roads where bicyclists are present and traffic flows at 40km/h (25mph) or more have dedicated bicycle facilities	9%	
iRAP Coding Manual	Median Type; Operating Speed	Percentage of roads where traffic flows at 80km/h (50mph) or more have divided carriageways	19%	
iRAP Coding Manual	Roadside severity (object & distance); Operating Speed	Percentage of roads where traffic flows at 80km/h (50mph) or more have low-risk roadsides	21%	
iRAP Coding Manual	Curvature; Operating Speed	Percentage of roads where traffic flows at 80km/h (50mph) or more do not have sharp curves	97%	
iRAP Coding Manual	Intersection Type; Operating Speed	Percentage of intersections where traffic flows at 60km/h (40mph) or more have turning provision	27%	
iRAP Coding Manual	Intersection Type; Operating Speed	Percentage of railway crossings where traffic flows at 60km/h (40mph) or more have active protection	47%	
iRAP Coding Manual	Number of lanes; Operating Speed	Percentage of roads where traffic flows at 80km/h (50mph) or more have dedicated overtaking provision	35%	
Star Rating for Schools	Pedestrian Star Rating	Percentage of school star rating data points that are 3-star or better for children	? %	

* potential to present by % of travel where volume data is available and reliable.



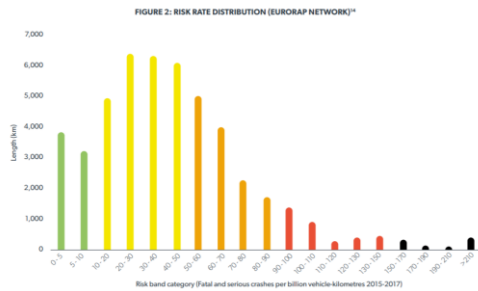
GLOBAL ROAD INFRASTRUCTURE KEY PERFORMANCE INDICATORS – NEW AND UPGRADED ROADS

Infrastructure and Speed Management for New and Upgraded Roads ([Global Road Safety Performance Target 3](#))

iRAP Global Standard	Protocol / Attribute	Primary KPI (Refer https://www.vaccinesforroads.org/ for sample of global and national performance)	Current Global Performance*	2030 Target	Extended Metrics (with primary performance measure in bold)
Star Rating	Pedestrian Star Rating	Percentage of travel on new or upgraded roads that are 3-star or better roads for pedestrians	? %	100%	% of length and % of travel in each category (5-star , 4-star , 3-star , 2-star, 1-star)
Star Rating	Bicyclist Star Rating	Percentage of travel on new or upgraded roads that are 3-star or better roads for cyclists	? %	100%	% of length and % of travel in each category (5-star , 4-star , 3-star , 2-star, 1-star)
Star Rating	Motorcyclist Star Rating	Percentage of travel on new or upgraded roads that are 3-star or better roads for motorcyclists	? %	100%	% of length and % of travel in each category (5-star , 4-star , 3-star , 2-star, 1-star)
Star Rating	Vehicle Occupant Star Rating	Percentage of travel on new or upgraded roads that are 3-star or better roads for vehicle occupants	? %	100%	% of length and % of travel in each category (5-star , 4-star , 3-star , 2-star, 1-star)

* Regular measurement of existing road networks (e.g. every 5 years as legislated in Europe) will provide an opportunity to measure progress; World Bank GRSF is currently undertaking a worldwide project measuring progress; The recently launched Star Rating for Designs tool supports performance tracking.

Risk Mapping Examples



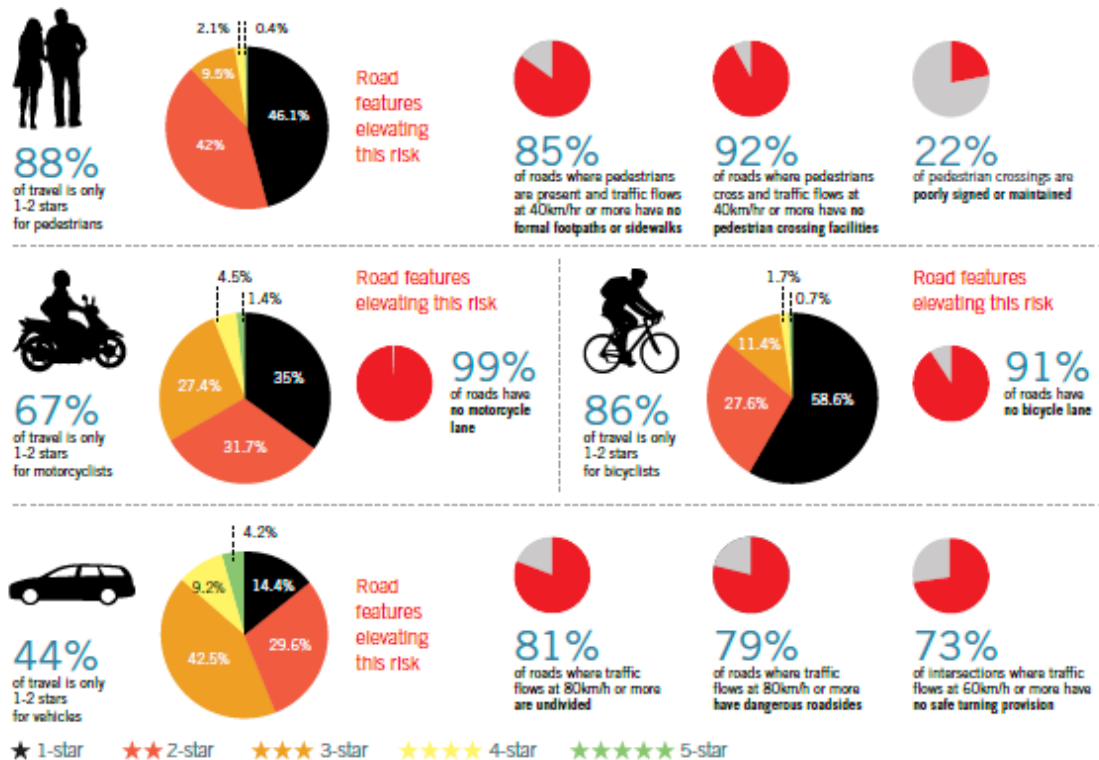
[EuroRAP UK Risk Mapping](#)

Period		High	Medium-High	Medium	Low-Medium	Low	Total
2002-2006	Percentage Length (km)	29% 339	12% 136	22% 254	18% 217	20% 233	100% 1,179
2007-2011	Percentage Length (km)	10% 118	22% 270	28% 332	25% 306	15% 178	100% 1,204

[KiwiRAP Risk Mapping](#)

Star Rating and iRAP Attribute Data Examples

BASED ON 358,000KM OF ROADS ACROSS 54 COUNTRIES:



vaccinesforroads.org/how-safe-are-the-worlds-roads/