



Vaccines for Roads

FOURTH EDITION
iRAP'S BIG DATA TOOL

Unlocking the potential of the world's largest road infrastructure safety database to explore how safe the world's roads are and provide the Business Case for Safer Roads.



How safe are the world's roads?

Explore your region >



Saving lives with safer roads: Case studies of success

Be inspired >



What is possible? The Business Case for Safer Roads

Examine the full potential >



A world free of high risk roads #VaccinesForRoads #3StarorBetter

Because every life counts.

A world free of high risk roads

THE GLOBAL CHALLENGE

THE COST OF INACTION IS UNACCEPTABLE.

Road crashes are mostly **predictable and preventable** and the benefits of action and a world free of high-risk roads is high.

We have the **vaccines for roads**.

Now is the time to save lives on a scale that matters as part of an integrated safe system approach.

FATAL

**AMPUTATIONS
QUADRIPLEGIA | PARAPLEGIA**

SEVERE BRAIN INJURY

BURNS | DEGLOVING

LOSS OF SIGHT/EYES

DISLOCATIONS

FRACTURES

EACH DAY

3,500

people are killed in road crashes

A HIDDEN REALITY FOR THE WORLD

100,000

suffer life-changing injuries daily

15,000,000

Will die between now and 2030

500,000,000

Will be injured between now and 2030

US\$24 trillion

in crash costs to the community up to 2030

THE GLOBAL VACCINES FOR ROADS

Unlocking the win-win potential to save 100 million deaths and serious injuries worldwide over 20 years.

iRAP's Big Data Tool, Vaccines for Roads IV, **unlocks the potential of the world's largest road infrastructure safety database** to explore how safe the world's roads are and provide the Business Case for 3-star or better roads for all road users worldwide. With knowledge of the current condition of the world's roads; the Business Case for Safer Roads and case studies of success, we have the policy setting, funding mechanism and recipe for scale. Together with effort across all pillars of road safety, we can more than halve road deaths and injuries worldwide!

Local partnerships, global programme

The International Road Assessment Programme (iRAP) is an international, award-winning charity dedicated to creating a world free of high-risk roads. The iRAP tools are provided in a free-to-air environment for all to use and contribute to in a spirit of mutual benefit. Working in partnership with road authorities, mobility clubs, development banks, NGOs and research organisations, our combined impact extends across more than 85 countries to save lives and reduce serious injuries.

THE GLOBAL TARGETS

In recognition of the global road safety crisis, the United Nations Sustainable Development Goals include targets to halve the number of global deaths and injuries (target 3.6); invest in infrastructure to create growth and jobs (target 9.1); and ensure that transport is safe and sustainable (target 11.2).



UN Member States have now finalised 12 Global Road Safety Performance Targets

In April 2018, the UN General Assembly adopted a new Resolution on Improving Global Road Safety, and launched the UN Road Safety Trust Fund to support catalytic action worldwide. The action will be focussed around the 12 Global Road Safety Performance Targets agreed by UN Member States in November 2017. Partners around the world are using their Road Assessment Programmes (RAPs) to target investment and optimise the life-saving potential of safer speeds and improved road engineering standards. The RAPs provide a well-established, evidence-based framework for investment and global action to support the UN targets on a scale that matters.

TARGET 3
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.

TARGET 4
2030

Target 4: By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.

If we meet Targets 3 and 4 by 2030...

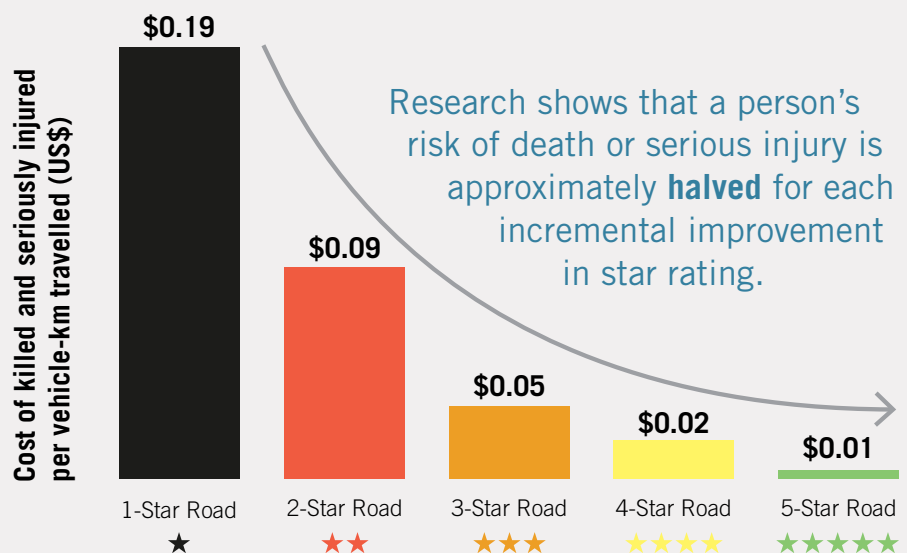


HOW SAFE ARE THE WORLD'S ROADS?

A 1-star road is the least safe and a 5-star road is the safest

Do you have a footpath? Is the road divided? Are the roadsides safe? Are the speeds appropriate? Star Rating and Investment Plan inspections create a rich source of data that provides an insight into why road trauma remains one of the world's leading public health challenges.

Based on evidence-based research, Star Ratings for pedestrians, cyclists, motorcyclists and vehicle occupants provide an objective measure of the likelihood of a crash occurring and its severity. 1-star is the least safe and 5-star is the safest.



Source: OECD (2016)

Ensuring more than 75% of travel is on 3-star or better roads for all road users by 2030 will save lives on a scale that matters.

A world free of high risk roads SO WHERE ARE WE NOW?

A GLOBAL SNAPSHOT How roads rate and the road features that matter

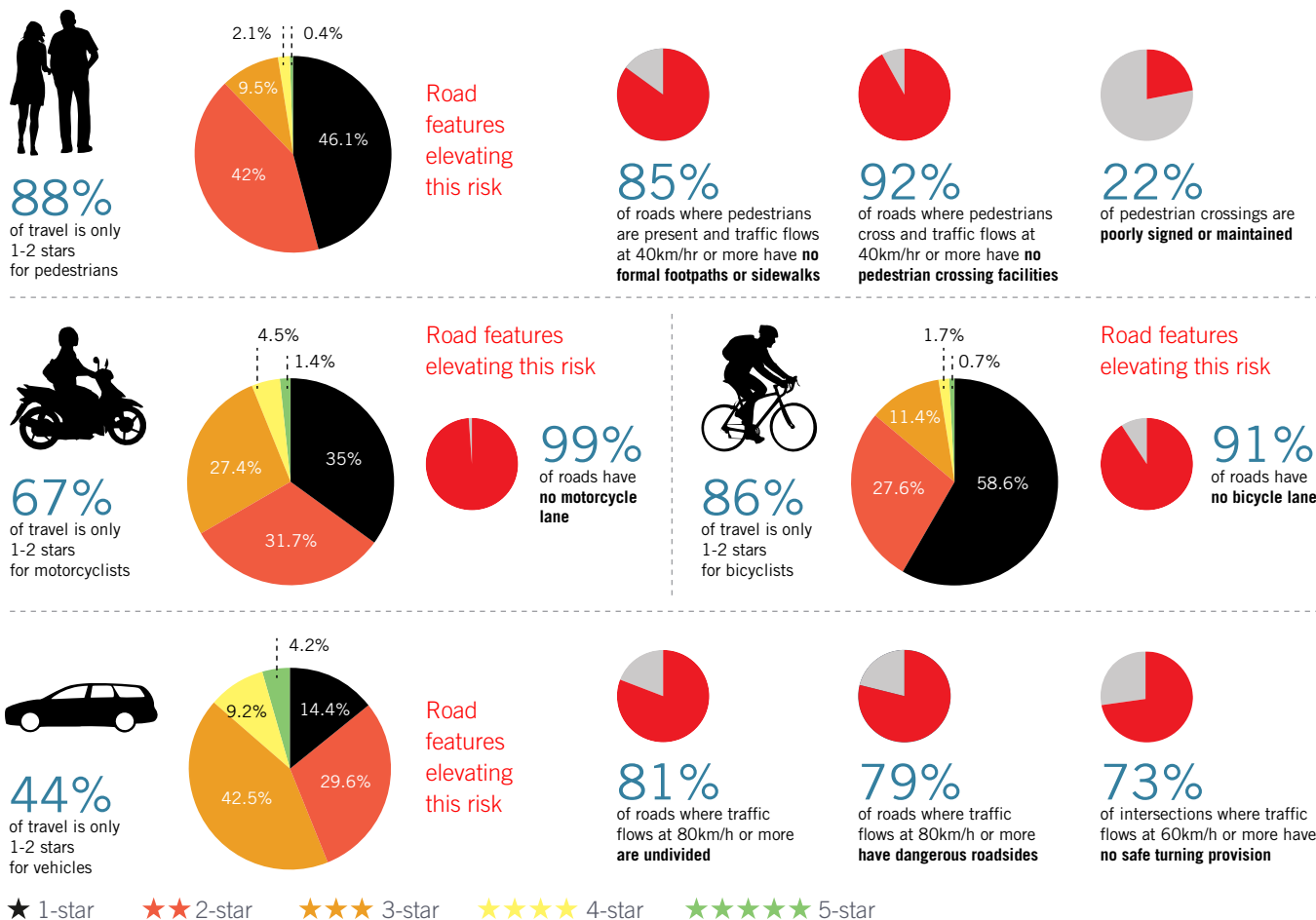
Road deaths and injuries are predictable and preventable. Head-on fatalities occur on undivided roads. Run-off road fatalities occur where the roadsides are unforgiving. Pedestrian fatalities occur where sidewalks are missing, safe crossing facilities don't exist or speeds are inappropriate.

vaccinesforroads.org summarises star rating and investment plan data and provides an interactive data analysis tool for reviewing how roads rate, as well as how road users fare on them globally and by country. The results are based on 400 million data points including roads in rural and urban areas and in low-, middle- and high-income countries.

The following charts present the road safety performance of the world's roads by road user group, along with the road features that elevate risk, to show the basic safety features missing from the world's roads.

See **vaccinesforroads.org** to explore more fully how safe the world's roads are by road type, road user group, traffic volumes, area type, road maintenance standards and by global region.

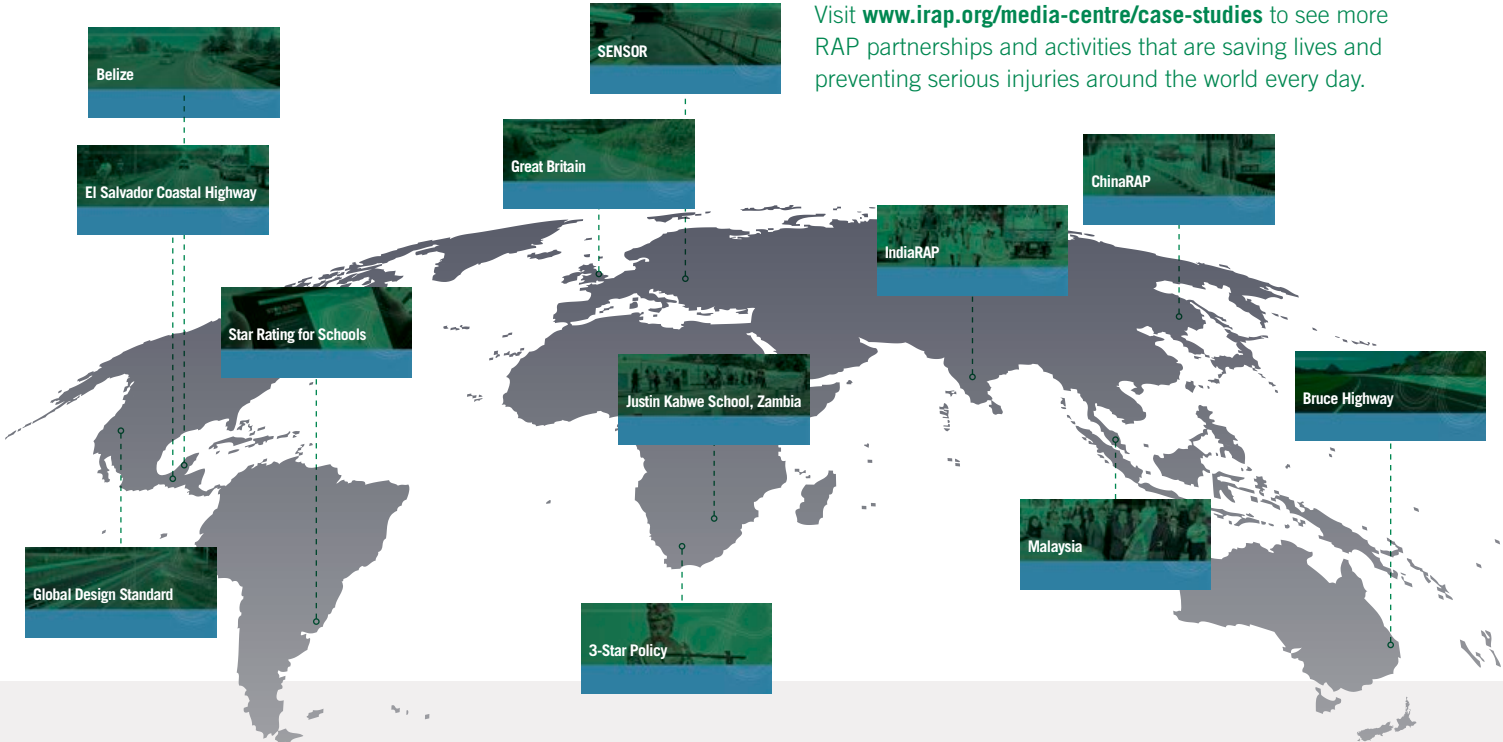
BASED ON 358,000KM OF ROADS ACROSS 54 COUNTRIES:



CASE STUDIES OF SUCCESS

Many governments and private road operators have now implemented road upgrades as part of their RAP projects and programmes. Policies are in place, optimised investment is being mobilised and lives are being saved. An estimated US\$60 billion of road investment is already being made safer. The following case studies show that saving lives on 3-star or better roads is truly possible as we **scale up action worldwide**.

Visit www.irap.org/media-centre/case-studies to see more RAP partnerships and activities that are saving lives and preventing serious injuries around the world every day.

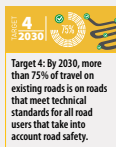


POLICY LEADERSHIP

3-STAR OR BETTER TARGET FOR ALL ROAD USERS BY 2030



ALL new roads 3-Star or Better



>75% of travel on existing roads 3-star or better

By setting ambitious and achievable policy targets using the global star rating standard, countries are creating a legacy of safer roads for future generations.

NATIONAL GOVERNMENT LEADERSHIP



Netherlands: No 1 or 2-star national roads by 2020



United Kingdom: 90% of travel on 3-star or better strategic road network by 2020, and 4 and 5-star motorways



Malaysia: 75% of travel on 3-star or better high volume roads by 2020



Sweden: 75% of network equivalent to 3-star or better by 2020 and near 100% by 2025



New Zealand: 4-star roads of national significance; Wellington Gateway toll roads to be a minimum 4-star standard



China: Five year Road Safety Plan requires national implementation of road assessments and rapid treatment of high-risk road sections



Australia: Queensland target 90% of travel on 3-star or better roads by 2022; Tasmanian Midlands Highway 3-star minimum standard



Chile: Autopista Central toll road upgrade to meet minimum 3-star standard

INTERNATIONAL INSTITUTIONAL LEADERSHIP



Asian Development Bank: Recommendation for 4-star roads for pedestrians and cyclists in linear settlements, 4-star for vehicles on roads carrying 50,000 vehicles or more, and 3-star or better for all other road projects.



UN Global Road Safety Performance Target: By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a 3-star rating or better.



Millennium Challenge Corporation: Eliminating 1 and 2-star roads in Moldova, Philippines, El Salvador, Cote d'Ivoire and Senegal



World Bank: Minimum 3-star roads for projects in India and Kazakhstan, amongst others.

A world free of high risk roads

THE BUSINESS CASE FOR SAFER ROADS

For each **\$100** that road trauma costs the community,

only **\$1-3** is currently invested to prevent crashes.

Put simply, there is a **gross under-investment in life saving road upgrades and speed management worldwide** – and the **solutions to save lives are highly cost-effective.**

The iRAP Business Case for Safer Roads, which can be explored at vaccinesforroads.org, provides a high-level global and national estimate of the lives and serious injuries that can be saved, and the social and economic benefits of maximizing the percentage of travel on 3 star or better roads by 2030.

The simple analysis shows that affordable road improvements, such as footpaths, safety barriers, bicycle lanes, paved shoulders and safer speeds, applied at large-scale, will play an important role alongside safer vehicles, safer road users and better post-crash care in achieving the UN SDG targets.

UN TARGET 4 >75% of travel on roads that meet technical standards for all road users by 2030 (equivalent to 3-star or better)

	Low income	Lower middle income	Upper middle income	High income	ALL
Number of countries	31	45	51	50	177

CURRENT SITUATION

Annual number of fatalities	195,569	423,148	472,563	116,331	1,207,611
Fatalities per 100,000 population	24.2	17.1	19.6	9.2	17.3
Annual number of fatalities and serious injuries	2,151,259	4,654,628	5,198,193	1,279,641	13,283,721
Annual cost of fatalities and serious injuries (% of GDP)	5.8%	4.2%	4.7%	2%	2.9%

WHAT CAN BE ACHIEVED with >75% of travel on 3-star or better roads for all road users by 2030*

Annual investment as a % of GDP (2018)	0.14%	0.18%	0.12%	0.14%	0.14%
Reduction in fatalities per year	86,342	169,259	174,106	37,332	467,039
Reduction in fatalities and serious injuries (FSI) over 20 years	18,995,159	37,237,024	38,303,352	8,213,036	102,748,571
Economic benefit (\$US)	\$273bn	\$1,335bn	\$5,063bn	\$4,507bn	\$11,180bn
Benefit Cost Ratio	18	9	16	5	8

*Full assumptions and national snapshots are available at vaccinesforroads.org



Achieving **>75%**
of travel on 3-star or better
roads by 2030 will save
an estimated
467,000
lives every year and
100 million
lives and serious injuries
over the 20-year life of
the treatments.

Targeted safe roads investment by
all countries of
0.1-0.2% GDP per year
through to 2030 will unlock this
incredible outcome with
\$8 of benefits
for every \$1 invested.



A world free of high risk roads TAKE ACTION NOW

Applying the Step by Step Approach to Safer Roads provides the confidence to invest, the metrics to measure success and the **vaccine we need for safer roads**.

Investing in safer roads and safer speeds will save lives and provide significant economic benefits. iRAP encourages and supports all countries to fully develop their own capacity to lead and deliver their own Road Assessment Programme.

STEP 1

Identify high-risk road sections

STEP 2

Undertake star rating & investment plan analysis

STEP 3

Set network and corridor level star rating targets

STEP 4

Establish a safer roads fund or dedicated funding stream

STEP 5

Invest in safer roads

STEP 6

Save lives and save money

STEP 7

REPEAT!



Join us on the #3StarorBetter journey
with #VaccinesForRoads

TAKE ACTION NOW >

vaccinesforroads.org

donate@irap.org

To establish or expand your own RAP programme, please contact us:

icanhelp@irap.org irap.org [irapsavinglives](https://twitter.com/irapsavinglives) [iRAPfb](https://www.facebook.com/iRAPfb)

iRAP is supported by  **FOUNDATION**

iRAP is the umbrella organisation for regional RAP programmes including:



The International Road Assessment Programme is a global registered charity. Registered Charity Number: 1140357 Registered Office: 60 Trafalgar Square, London, WC2N 5DS, United Kingdom

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Maximising travel on 3-star or better roads for all road users vaccinesforroads.org