

**Road Traffic**  
Management Corporation



# I should have told him to slow down.

We were not even in a hurry. We just couldn't wait to be with our family, and now I don't have a family. Do not end up in my position or even worse, dead. **Be a responsible road user.**



Report Unsafe Road Usage  
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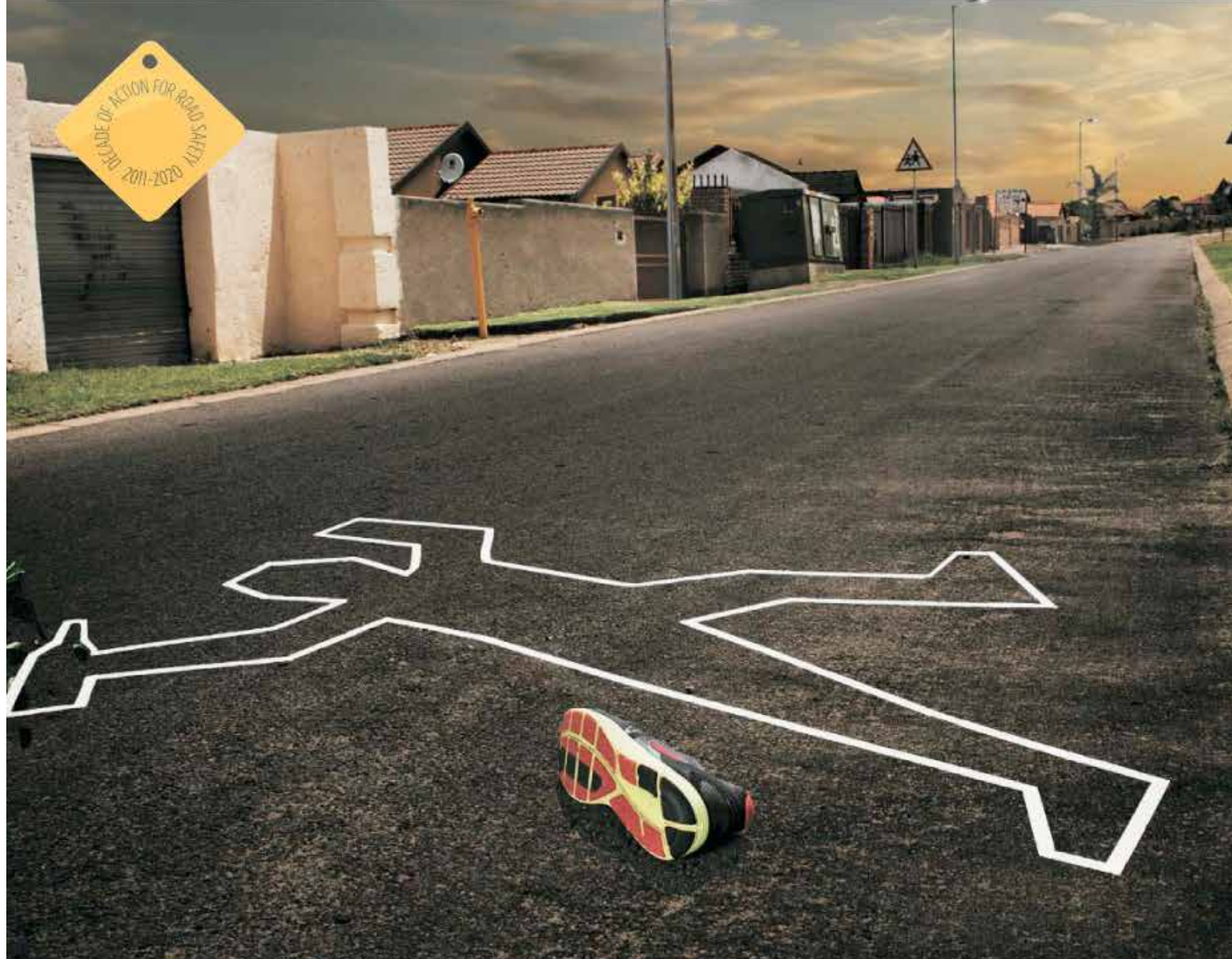




**South African Road Assessment Program**  
**South Africa Free of High Risk Roads**







**If only he was as visible  
as the chalk outline.**

Walking drunk is as dangerous as drunk driving if not worse. Pedestrians account for just under 40% of road fatalities. Be sober. Be visible. Walk responsibly.



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**When there is nowhere to go,  
it's too late to regret.**

A head on collision is one of the most fatal ways to bring your life to a screeching halt. They are largely caused by inconsiderate driving behavior. Road infringements are deadly. **Adhere to road markings.**



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## Foreword : Road Traffic Management Corporation



**Mr Collins Letsoalo**

Acting CEO: Road Traffic Management Corporation

## Foreword: Road Traffic Management Corporation CEO

Road traffic injuries are a growing public health, economic and social issue, disproportionately affecting vulnerable groups of road users (VRUs), especially the poor. Each year almost 1.3 million people die and a further 50 million are injured or permanently disabled in road crashes. Road crashes are now the leading cause of death for children and young people aged between 15 and 29. The burden of road crashes is comparable with malaria and tuberculosis and costs between 1% and 3% of the world's Gross Domestic Product (GDP) - more than the total development aid received by the lower and middle income countries. In South Africa almost 14 000 people die on our roads costing the economy R306 billion, about 1.5% of the country's annual GDP.

Compounding the problem the country is still coming to terms with the rapid post-apartheid urbanisation with linear developments and urban sprawl contributing to the crash dynamics of the country. In particular road infrastructure development has not received the dedicated safety standard assessment that is expected of a motorised society like South Africa resulting in increased interaction between vehicles and people.

These problems are not unique to South Africa and in a reflection of the significant social and economic impact of road crashes worldwide, the United Nations has declared 2011-2020 the Decade of Action for Road Safety. It is expected that during the decade, significant efforts will be made to halt and then reduce the death toll through systematic improvements in road infrastructure, road user behaviour and vehicle safety.

In particular through the United Nation's Global Plan for Road Safety it is recommended that all countries, regardless of their level of road safety performance, move to a Safe System approach of road safety. This approach is built on existing road safety interventions but reframes the way in which road safety is viewed and managed in the community. It addresses all elements of the road transport system in an integrated way with the aim of ensuring that crash energy levels are below what would cause fatal or serious injury. It requires acceptance of shared overall responsibilities and accountability between system designers and road users. It stimulates the development of the innovative interventions and new partnerships and consensus necessary to achieve ambitious long term targets

As the lead agency for road traffic management in the country, the RTMC as a member of the United Nations Road Safety Collaboration has embraced the Safe System approach to road safety and in particular has adopted proven, global, best practice initiatives to meet the needs of the South African environment.

One such global practice is the International Road Assessment Programme (iRAP) which is a scientific tool used to conduct road assessments and recommend remedial actions. The Programme helps identify hazardous locations and develop road safety plans and interventions integrating engineering, enforcement and education. Furthermore, in the programme the road system is designed to expect and accommodate human error and in the event of a crash, the impact energies remain below the threshold likely to produce either death or serious injury.

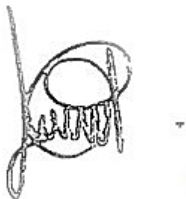


The Corporation has entered into a partnership with IRAP to roll out the programme as part of South Africa's commitment to the Decade of Action. The plan forms part of the RTMC's overall vision to make roads safe with particular focus on eliminating high risk roads.

The South Africa "free of high risk roads" initiative will include-:

- the assessment and performance tracking on 36,000km of road where over 50% of fatalities in South Africa occur.
- Targeted investment in proven high return treatments across the country.
- The elimination of one and two star roads by 2020.

Finally the success of the Road Assessment Programme in South Africa cannot be achieved on its own. It needs the co-operation and dedicated support of all stakeholders to take the assessment and improvement standards of South African roads to a better level of safety. Specialist road agencies, corporate, non-governmental agencies, national government and even lower echelons of authority need to work for the greater good of the country's roads. Let us as South Africans make the National Development Plan a reality and contribute to "Safe roads – the change we want to see".



CP Letsoalo

Acting CEO: Road Traffic Management Corporation



CREATE A WORLD FREE  
OF HIGH RISK ROADS



## Message: International Road Assessment Program



**Mr Rob McInerney**

CEO: International Road Assessment Program



## Message: International Road Assessment Program

3,500 people will die on the world's roads today and 100,000 will be seriously injured. Road death is not inevitable – it is preventable.

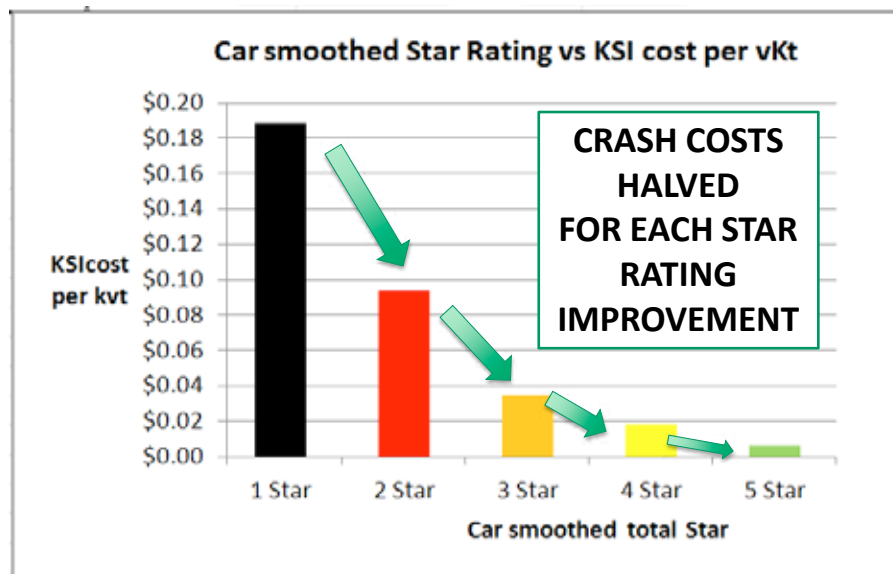
There has never been a more opportune moment to tackle road deaths and serious injuries, by fundamentally changing the inherent safety of road systems around the world. Causes of road trauma are well known, as are 'vaccines' to prevent them. The United Nations Decade of Action for Road Safety 2011-2020 has brought unprecedented international leadership and political-will to the cause. iRAP programmes are now providing the catalyst for change and tools needed for politicians, policy makers and engineers to unlock the life saving changes needed for a world free of high risk roads. We can and must make this happen.

As a charity, iRAP seeks to support and enable others to deliver the vaccines for roads. We work at a global scale, with projects and programmes in over 80 countries worldwide. We act on sound research and compelling evidence and are moving urgently to stop road deaths and serious injuries. We provide the business case for large scale and transformational investment in safer road infrastructure.

The launch of the South African Road Assessment Programme (SARAP) is a very exciting and highly important initiative by the RTMC. With a road fatality rate 10 times worse than the best performing countries there is a need for immediate action. This can occur with the knowledge that the solutions exist to save lives. SARAP will help create the partnerships between those who can set the policy targets, monitor progress, develop, create and deliver a South Africa Free of High Risk Roads. Together with the RTMC as the lead agency responsible for road safety in South Africa, and other stakeholders such as the Department of Transport, Ministry of Finance, SANRAL, SARF, Road Accident Fund, SALGA, South African Police Service, Universities and CSIR can unite to tackle this crippling burden on the South African people and economy.

Our partnership with RTMC will see SARAP assess over 36,000km of the high risk South African road network during the Decade of Action and measure the safety of the road through the star ratings for pedestrians, cyclists, motorcyclists and vehicle occupants. Research in other RAP countries has shown that the crash costs per kilometre travelled will halve for each incremental improvement in star rating. Achieved across South Africa this will make a huge impact on the estimated R300 billion cost of road crashes annually.

## Star Ratings and Crash Data



A World Free of High Risk Roads

/RAP

The SARAP Safer Road Investment Plans will provide the confidence for the South African government and financing institutions to leap-frog existing practice and invest in large scale and accelerated provision of safer road infrastructure.

These SARAP investment plans will help demonstrate that by investing in safer roads, the South African Government can remove the enormous road crash burden on families, communities, workplaces and the health and insurance sectors. Through the setting of ambitious policy targets such as no one or two star roads by 2020, or minimum three star standards for all new road designs, SARAP can help provide the mechanism and catalyst for change that will provide a legacy of safer roads for future generations.

Together, we can create a South Africa free of high risk roads.

R McInerney

CEO: International Road Assessment Program

## State of Roads in South Africa

Road crashes cause enormous grief to victims, their families and friends. They are also often a factor responsible for tipping a household into financial distress. The loss of a wage-earner due to death or disability can be disastrous, leading a family into lower living standards and poverty. With an estimated 33.2 fatalities per 100,000 populations the burden of road traffic injuries is especially severe in South Africa.

South Africa has a road network of over 750 000 km used by more than 10 million cars, monitored by approximately 17 000 officer. Approximately 14 000 lives are lost annually on our roads. The past festive season 1465 lives were lost, with a decrease of only five people from the previous festive season.

South Africa as a developing country has dysfunctional roads with all the features that characterize the worst fatality volumes in the developed countries, which are:

- Roads with traffic volumes and speeds that they were not designed for;
- High proportion of young inexperienced drivers; and
- High proportion of vulnerable road users in the same road space with vehicles where their safety is not a priority.

Importantly, all these factors can be mitigated by improved infrastructure. Safely designed roads are capable of carrying higher volumes because they segregate users into streams and protect. They collect and gather risky crossing movements where these movements can be carried out safely.

We have the opportunity now to change this appalling situation. The United Nations has declared that 2011-2020 will be the Decade of Action for Road Safety. The goal is to halve the forecast level of road deaths by 2020, preventing 5 million deaths and 50 million serious injuries. The real annual cost to the economy associated with road crashes in South Africa is estimated to be in excess of R300 billion a year.

Safe road infrastructure for all road users will be crucial in achieving this goal. This is where iRAP, as the next generation of road assessment, has an important role to play. Together with safer behavior, safer speeds and safer vehicles, iRAP can help save millions of lives.

### South African road safety strategy

The key outputs of the South African Road Assessment Programme will provide objective data that can guide policy and performance tracking throughout the Decade of Action for Road Safety. The iRAP team will work with the RTMC to ensure all opportunities to utilise the iRAP assessments and performance measures are integrated and included as part of the strategy. This could include but is not limited to:



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**in making South African roads**

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- Policy target of “South Africa free of high risk roads” to capture the full safe system outcomes targeted as part of the plan through the use of iRAP Risk Maps.
- Policy target of “No 1 or 2 star roads by 2020” to capture the targeted action to bring road infrastructure safety up to a minimum standard on highest volume 10% of roads.
- Inclusion of various “Key Performance Indicators” related to the crash performance on the road network, the condition of the asset or the economics of road upgrades.
- Estimates of the expected returns from the overall program to provide the business case for investment in road safety across the country.
- Minimum Star Rating standards for new road designs.

The proposed approach to assisting in this aspect of the project will include a combination of remote support and inputs in to any National Road Safety Strategy development meetings as required. Participation in any joint workshops/discussions in South Africa will be coordinated as part of other year one activities undertaken by the iRAP team in-country.

## Star Rating

Star Ratings are an objective measure of the likelihood of a crash occurring and its severity. They draw on road safety inspection data and the extensive real-world relationships between road attributes and crash rates. Research shows that a person’s risk of death or serious injury is highest on a one-star road and lowest on a five-star road. By measuring the risk associated with road attributes, Star Ratings can provide a better indicator of the influence of road attributes on risk than crash numbers alone. The focus of Star Ratings is on attributes that influence the most common and severe types of crashes for vehicle occupants, motorcyclists, pedestrians and bicyclists.

The Star Rating of approximately 4,000 km of road network (4,900 carriage-way kilometers) and incorporation of minimum star ratings for new road designs will be undertaken during this financial year.

Factors contributing to road crashes in South Africa

- Speeding
- Reckless and negligent driving

Type of collision

- Head on collisions
- Multiple vehicle crashes
- Collisions with fixed objects

**safe, obey the rules of the road.**



40% of people that die on our roads are pedestrians (urban and rural areas)

- Pedestrian sidewalks, safe crossings and bridges are vital and enhanced infrastructure will play a huge role in reducing road crashes in South Africa.

### Speed survey

General speed limits in terms of the National Road Traffic Act, 1989 and its regulations:

- 60 km/h on public roads within urban areas
- 100 km/h on public roads outside urban areas, which is not a freeway.
- 120 km/h on every freeway

### Data collection

Given the continuous challenges we face regarding the reporting of crashes within the road traffic fraternity, the RTMC looked at options to improve crash data collection. A Crash Information Management System (CIMS) was developed to improve crash reporting and data collection. The Crash Information Management System will provide close to real time data as crashes occur and will also help in providing intelligent data that will assist in better analysis, better planning and strategies in the road traffic management arena. As part of the SARAP initiative, a thorough inspection of the conditions of the roads will be undertaken by industry experts to identify areas of concerns and map the way forward for safer roads for all in South Africa. Road Safety Audits are also vital in identifying problems and solutions.



## Most Hazardous Routes

The SARAP assessment will initially target the most hazardous routes in South Africa.

Road	Location	Centreline kilometres <sup>1</sup>	Carriageway kilometres <sup>1</sup>
R 23	N3 (sth of Heidelberg) – N11 (Volksrust)	181 km	181 km
R 24	R28 (Krugersdorp) – N14	15 km	15 km
R 28	N12 (Westonaria) – R24 (Krugersdorp)	30 km	60 km
R 36	N4 (Ntokozeneni) – N2 (Ermelo)	110 km	110 km
R 61	N6 (sth of Queenstown) – N2 (Oslo Beach)	526 km	526 km
R 71	N1 (Polokwane) – R36 (Tzaneen)	95 km	95 km
R 80	R55 (Bremer St, Pretoria) – M35 (Soshanguve)	21 km	41 km
R 102	N2 (Empangeni) – N2 (Mount Edgecombe)	156 km	161 km
R 568	R573 (Kwamahlanga) – N4 (Bronkhorstspuit – including pt R104/R25)	53 km	53 km
R 573	R513 (Zambezi Dr) – R568 (Kwamahlanga)	74 km	74 km
N1	N3/M1 (Sandton) – R508 (Irwin St, Musina)	494 km	654 km
N12	Potchefstroom - N1 (Devland)	101 km	149 km
N1	N12 (Devland) – N12 (Diepkloof)	5 km	10 km
N12	N1 (Diepkloof) – N3 (Gosforth Park)	19 km	38 km
N2	R36 (Ermelo) – R102 (Empangeni)	411 km	411 km
N2	R102 (Mount Edgecombe) – N6 (East London)	658 km	784 km
N3	M1 (near Sandton) – Durban	575 km	950 km
N4	R25 (Bronkhorstspuit) – R40 (Nelspruit)	262 km	361 km
N4	Northern route R36? / R 539? (nth of Ntokozeneni – west of R539 int'n)	61 km	61 km
N6	Griffith St (Queenstown) – N2 (East London)	161 km	161 km
	TOTAL	4,008 km	4,895km

<sup>1</sup> Lengths are provisional estimates only and are subject to final confirmation from inventory records. Further work will be necessary to identify the exact start and end points, dual carriageway locations and key landmarks to reference and segment the network.





# Reserved for negligent road users.

About 300 people die on our roads weekly. Human error is the largest contributor to all this carnage. Be aware of pedestrians, animals and other road users at all times. **Avoid the grave.**



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## South Africa “Free of High Risk Roads”

The United Nations Decade of Action for Road Safety from 2011-2020 requires ambitious and focused leadership to reduce the shocking level of road trauma in South Africa.

RTMC will lead the implementation of South Africa’s plan for the Decade. The SARAP initiative will provide the performance tracking tools for the Decade and the investment analysis to deliver the “Safe Roads” component of the plan with confidence.

Risk Mapping of crashes/km and crashes per km travelled to the iRAP international standard will provide ongoing monitoring and measurement of success.

Star Rating of roads will provide the benchmark of the current engineering safety of the road network. Five star the safest and one star the least safe.

Safer Road Investment Plans will identify and locate the cost effective road improvements and quantify the expected lives saved and economic benefit possible.

The South Africa “free of High Risk Roads” initiative will deliver:

- Assessment and performance tracking on the highest volume 10% of sealed roads (36,000km) where over 50% of fatalities are expected to occur
- Targeted investment in proven high return treatments across the country
- The elimination of 1 and 2 star roads by 2020.
- 2013/2014 SARAP Initiatives
- iRAP Risk Mapping Trial of the most hazardous routes and standard reporting in the Crash Information Management System
- Star Rating and Investment Plans completed on 4,900 carriage-way km of the most hazardous routes based on RTMC investigation.
- Major capacity building for South African resources, in conjunction with SARF, CSIR, Universities and other stakeholders, to ensure a sustainable local programme.
- Development and implementation of the SARAP Communication Strategy.
- The key focus of iRAP support for the programme includes assistance with:
- The establishment, support and management of an integrated South African Road Assessment Programme (SARAP) hosted by RTMC
- Cooperative action to link proposed SARAP outcomes with policy and target setting
- Creation of a plan that will seek to build and support local capacity to deliver and manage the programme in the longer term
- The establishment of an iRAP Centre of Excellence in South Africa to support the programme locally and potentially throughout Southern Africa
- Access to the global support and resources of iRAP
- Training of road engineers in the use of iRAP methodology and tools
- A routine road inspection program to monitor infrastructure safety
- Support for the development and adoption of infrastructure improvement plans for approximately 36,000km of high volume roads
- Advocacy at the national level to support action for better road safety.

# ROAD SAFETY TOOLKIT

Crash Types



Road Users



Treatments



Free information on the causes and prevention of serious road crashes

[toolkit.irap.org](http://toolkit.irap.org)





## Cost of Crashes to South African Economy

The following method was used to calculate the annual cost of road crashes:

$$\begin{aligned}
 \text{Value of fatality} &= 70 \times \text{GDP / Capita (PPP)} \\
 &= 70 \times \text{US\$10 700} \\
 &= \text{US\$749 000} \\
 \text{Value of fatalities} &= 13\,932 \times \text{US\$749 000} \\
 &= \text{US\$ 10 435 068 000} \\
 \text{Value of Serious injury} &= 25\% \times \text{value of fatality} \\
 &= 25\% \times \text{US\$ 749 000} \\
 &= \text{US \$ 187 250}
 \end{aligned}$$

(Ratio of deaths to injuries is estimated at 1:10)

$$\begin{aligned}
 \text{Value of injurie} &= 138\,520 \times \text{US\$ 187 250} \\
 &= \text{US\$ 25 937 870 000} \\
 \text{Cost of crashes per year} &= \text{US\$ 10 435 068 000} + \text{US\$ 25 937 870 000} \\
 &= \text{US\$ 36 372 938 000}
 \end{aligned}$$

Converted into local currency gives:

$$\begin{aligned}
 &\text{US\$ 36 372 938 000} \times \$/\text{R exchange rate (8:43)} \\
 &= \text{R306 623 867 000} \\
 &= \text{R307 billion /annum}
 \end{aligned}$$

Refer to "True Cost of Road Crashes" [www.irap.org/library.aspx](http://www.irap.org/library.aspx)

Examples impacts

$$\begin{aligned}
 \text{Road Accident Fund} &= \text{R 12 billion per year} + \\
 \text{Insurance industry} &= \text{R 11 billion on parts only} \\
 \text{Hospitals} &= 25\% \text{ of trauma admissions}
 \end{aligned}$$

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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