Ensuring safer roads

Jason Lowe

The Roads Policy for South Africa sets benchmarks on all matters relating to road regulation, roads infrastructure, road safety, road funding and non-motorised transport. It provides the necessary overarching framework to ensure that South Africa’s roads are better managed, safer, and includes all modes of transport to deliver a sustainable approach to roads management.

SANRAL has played a significant role in updating the road safety component of the roads policy by integrating aspects relating to engineering, education and enforcement.

Historically, national road guidelines placed their primary focus on motorists. This was because the non-motorists were not legally allowed to enter the national road reserve. Poor historical spatial planning and pedestrian management has however necessitated the need to accommodate Non-Motorised Transport (NMT) users within the national road reserve. Minor focus was placed on other road users as well.

For the majority of people in rural areas, walking is the only available option, even for transporting goods. Many people, especially in rural areas, live the experience of public and non-motorised transport daily, and sometimes throughout their lives.

SANRAL has worked on guidelines for Public Transport and Non-Motorised Transport to address challenges of accessibility and mobility, and incorporate all road-users – including pedestrians and cyclists – safely into the national road network.

These guidelines will contribute to redressing pre-democracy failures in infrastructure, such as poor pedestrian management; poor spatial planning, which sees high-volume pedestrian generators located close to the freeways; and the high number of schools located within 2km of SANRAL roads.

There is a need for balance among freeway mobility, public transport and pedestrian accommodation, while ensuring the safety of pedestrians and other road users.

More than 40% of the yearly fatalities on our roads affect vulnerable road users such as pedestrians, wheelchair users and cyclists. The updated guidelines are intended to make roads safer for these users.

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INVESTING IN ROAD SAFETY

New technology introduced on the SANRAL network enables road authorities to get accurate data on the weight of vehicles while they are traveling at normal speeds. This is a major boost for national efforts to combat the overloading of vehicles and improve the general safety of road users.

Weigh-in-motion (WIM) technology has been installed at several traffic control centres on major highways. Plans are in place to expand the network of WIM systems at strategic locations around bigger towns and at border posts.

Overloading is a primary concern for road users and traffic authorities. Overloaded vehicles contribute greatly to road damage and heavy trucks are more likely to break down on the road, resulting in traffic jams, delays and frustration among motorists.

Some of the elements of the WIM technology are embedded in freeway surfaces through inductive loops connected to electronic equipment. Sensors accurately measure the weight of the vehicle and transmit the data through fibre networks or satellite technology to provincial control centres or SANRAL’s headquarters in Pretoria.

The network of WIM systems will be built to meet the high standards required for law enforcement. These standards are being developed and must be approved by the National Regulator for Compulsory Specifications. Once new legislation has been passed and the standards are approved, WIM will be used to prosecute serious offenders.

The benefits of this technology are already apparent. Dangerously overloaded trucks will no longer be able to evade physical weigh stations by diverting to secondary roads and causing damage to surfaces not designed to sustain such loads.

The technology will also improve the productivity of law enforcement officials and reduce the risk of corruption that might occur at weighbridges.

The monitoring of vehicles at conventional weighbridges on national routes continues. During 2017/18, more than 1.78m vehicles were weighed and more than 30,000 drivers charged for overloading.

SANRAL also has eight vehicle-inspection facilities at major weighbridges, where 10,852 vehicles were tested for roadworthiness. Of these, 30% failed to meet road safety standards and traffic police on site took action through the issuance of fines or the removal of vehicles from the roads.

C utting-edge technology is increasingly used to make South Africa’s freeways safer and improve the speed and efficiency of emergency services responding to collisions.

Freeway management systems (FMSs) were introduced by SANRAL on some of the busiest routes in the country to monitor traffic, detect incidents, coordinate the actions of first responders and communicate information to road users.

Access to real-time information about road conditions and traffic flow enable road users to plan their journeys better and avoid potentially dangerous situations.

But the impact of freeway management systems is much wider than saving lives. By mobilising effective responses, the system reduces the economic consequences of traffic back-ups. It also contributes to the safety of motorists who might experience breakdowns.

Incident data is analysed to identify crash trends and high-risk locations. This enables SANRAL to introduce safety measures and provides valuable information to traffic management and law enforcement officials.

The contribution of FMS to road safety on primary roads is profound and measurable.

- On the Cape Town freeway network, the FMS facilitates a coordinated response to more than 21,000 incidents a year. On average, an incident is detected within 2.5 minutes of occurring and first responders are immediately dispatched to the scene.

- On the busiest sections of the N2 and N3 freeways in KwaZulu-Natal an FMS network is in place comprising of 144 cameras, 26 variable message signboards and 59 radar vehicle detector systems. All communicate via a high-speed fibre optic system to the SANRAL nerve centre in Pietermaritzburg.

- In Gauteng, which deals with the largest number of incidents, SANRAL has a dedicated fleet of on-road services vehicles, which are at the scene before the emergency medical services arrive in six out of 10 cases.

TECHNOLOGY
Pedestrian safety is a priority

Poor historic town planning has resulted in communities being cut off from places of employment, work and commercial activities. Hence, many men, women and children still lose their lives or are seriously injured when crossing busy roads.

SANRAL is leading efforts to address this problem by working with municipalities to ensure pedestrians are taken into consideration during town planning.

Meanwhile hundreds of kilometres of pedestrian walkways and other facilities have been constructed by SANRAL throughout the country, to ensure the safety of pedestrians.

1. At De Doorns along the N1 in the Cape Winelands, the communities living and working in this area were forced to walk along and to cross the N1 daily. Over the period 2008–2018, there were 362 crashes involving 76 pedestrians, with 23 fatalities. Walkways with guard rails have been constructed over a 13km stretch of the N1, as far away as possible from the road edge.

2. Between Murchison and the Marburg interchange in KwaZulu-Natal, 2.3m-wide sidewalks were constructed with guardrails to offer protection to pedestrians from the traffic. Taxi rank and bus facilities were provided at Murchison, while bus and taxi bays were also constructed along the road.

3. In the Eastern Cape, 20km of walkways have been built along the N2 from Mzeke to Mount Frere.

Better protection for pedestrians

Pedestrian safety receives priority attention in the design and construction of the SANRAL road network and a number of projects are under way to upgrade road infrastructure to meet high safety standards.

A great example of this is the construction of a new pedestrian bridge over the N2 that will soon be completed near George in the southern Cape. Pedestrian safety is an issue of major concern for road planners, designers and law enforcement entities. Statistics show that human behaviour is the single biggest contributor to road fatalities in the country – 91% – and pedestrians are the most at risk.

Jaywalking and substance abuse contribute to the high number of fatalities and serious accidents. But the behaviour of pedestrians is also influenced by the lack of infrastructure – such as pedestrian bridges across busy roads – to facilitate safer commuting.

The new bridge near George is proof of SANRAL’s commitment to the “safe systems” approach adopted by the global community, it combines greater awareness and education about road safety with modern law enforcement practices, but it also recognises the value of intelligent and forgiving road infrastructure.

The new pedestrian bridge links the communities of Thembalethu and Balfour near George, and will facilitate the safe passage of pedestrians, especially school children, who regularly cross the N2 at this point.
Road safety meets development

The upgrade of three major intersections in Kimberley has brought significant relief and safety benefits to residents and visitors to the capital of the Northern Cape. The project was completed in late 2018 and involves the construction of traffic circles to replace the conventional intersections at three locations on the R31 — the Hopetown road (N12), the N8 from Griekwastad and the R357 towards Douglas. SANRAL explored various options to manage the traffic and improve safety at very important crossroads and strategic decisions were taken to introduce traffic circles. The objective was to reduce the number of serious and fatal crashes and improve the safety of all road users through innovative road design and improved traffic management.

Vehicles approaching traffic circles are compelled to reduce their speed and this will reduce the severity of impact should crashes still occur. As part of the upgrade SANRAL also built new pedestrian facilities and bus shelters.

The project had a budget of R115m, of which about a third was allocated to SMME contractor development. Some 170 local residents benefited from work opportunities and training programmes associated with the year-long project.

The roads leading into the Northern Cape Town of Kathu are vital to the socio-economic growth of this important mining area. During the past year, SANRAL has done major upgrades to the N14, the national road that connects Kathu to the larger towns of Vryburg and Kuruman, and eventually to the West Coast and neighbouring Namibia.

Road safety is a primary concern for residents and industry in a town that is known as the “iron ore capital” of the Northern Cape. Heavy trucks transporting ore, equipment and supplies frequently travel on the N14, while recent industrial and residential expansions in the town have contributed to a growth in traffic.

The construction projects included the upgrading and improvements of three major intersections near the town — Olifantshoek, Kathu South and Kathu North. Chicanes were introduced to slow down trucks approaching the intersections and sidewalks were constructed to improve pedestrian safety.

About 25% of the project was earmarked for SMME contractor development, including the involvement of emerging business in the surrounding communities.

Lazarus Phala, one of the SMME subcontractors on the project, praised SANRAL for the quality of its capacity building and skills development programmes, which will enable him to participate in more advanced construction tenders in future.

Offering a safer gateway into Africa

The N1 near Musina on South Africa’s northern borders is one of the busiest highways on the African continent. On a regular day this stretch of road can carry up to 1 000 heavy vehicles – with the volume picking up during peak periods.

All this traffic must pass through the town of Musina, resulting in major congestion, damage to infrastructure and safety risks for local residents, especially pedestrians.

SANRAL’s response was to commission the construction of the Musina Ring Road, an 8km new single-carriageway road on the western side of the town’s central business district. When complete, the road will provide controlled access to and from the N1, as well as the town through two interchanges.

The modern new road will significantly improve safety and quality of access for all road users and residents, regular traffic to and from the border with Zimbabwe, and the road freight sector.

Further to the south, a similar ring road in Polokwane, the capital of Limpopo, is being constructed. The road will become a dual carriageway through the addition of new lanes in each direction, thus reducing congestion and contributing to higher levels of safety for all road users.

While construction of both the Musina and Polokwane ring roads are on hold due to the contractor being in business rescue, SANRAL is taking alternative steps to ensure that works is resumed and completed as early as possible.
Road innovation protects

Engineering plays an important role in road safety in South Africa. It serves no point to preach road safety to people when the very roads they are using are dangerous because of the way they have been designed or maintained. We need innovative engineering solutions and to show greater respect for laws to intervene in areas that are high-crash zones. Indeed, you may find that to reduce pedestrian deaths on a particular stretch of road, all that is needed is a safe pedestrian crossing point.

The safety strategy must be able to respond to that kind of challenge. A recent example demonstrates that better roads can bring about a safer environment and contribute to a reduction in the number of crashes and fatalities.

The use of technology to promote road safety is very much aligned with the ‘Safe Systems’ approach adopted globally through the United Nation’s Plan for Road Safety. This approach also underpins South Africa’s National Road Safety Strategy.

The Safe Systems approach accentuates the need for all stakeholders to accept responsibility for road safety. Roads authorities such as SANRAL will continue to play a proactive role in ensuring a road environment that is self-explanatory, forgiving and which provides for the needs of all road users, including pedestrians.

The R71 linking Polokwane with the eastern parts of Limpopo is well known as one of the busiest stretches of road in the country, especially during Easter, when it carries more than 17 000 vehicles a day en route to Moria for the religious pilgrimage.

SANRAL’s re-engineering of the road to Moria entailed the construction of a new intersection and a dual carriageway on the busiest stretch close to Zion City.

A new pedestrian walkway was also constructed to provide members of the community improved and safer access away from the main road surface.

Residents of Klerksdorp in the North West can look forward to a safer road environment with the construction of concrete sidewalks and kerbing, fencing off a section of the road, minor capacity improvements and drainage, as well as improvements to four existing intersections on the N12 near the Jouberton and Alabama townships.

At the R1.14bn Mount Edgecombe interchange, which was officially opened by Minister of Transport Blade Nzimande in October 2018, road safety has been improved with the implementation of directional ramps, cutting down the need for controlled signalisation and associated back-up of traffic onto the freeway, thereby ensuring safer free flow of traffic in all directions.

Public transport lay-byes with footways connected to a pedestrian bridge crossing over the N2 have been constructed to ensure the safety of pedestrians. Also, high-tech lighting has been installed to ensure the whole interchange is properly lit at night for increased safety.

The upgrading of a 33km stretch of the N2, between Mtunzini toll plaza and the Empangeni T-junction, which began in March 2016 and has been the scene of several fatal crashes, is nearing completion. This entails transformation into a 14m-wide, safer dual carriageway highway, which will enable the key arterial road to cope with increased traffic volumes.

The major overhaul of the entire stretch of the R573 Moelo Road, which has earned the title “road of death” because of the many fatal accidents there, will see several illegal access routes being closed off through proper fencing and new, safer walkways being constructed.

The 160km stretch of road runs through three provinces: Gauteng, Limpopo and Mpumalanga, and is used by approximately 50 000 commuters every day.

Road markings, including paint and studs, are being given priority attention countrywide, owing to many serious crashes occurring at night when markings are not clearly visible.

SANRAL has introduced performance-based road marking contracts, as there have been too many instances where road markings have deteriorated long before their specified lifespan. Under this new system, payment is only made to the contractor once it has been ascertained that the paint complies with minimum standards over a length of time.
The private sector companies that manage important stretches of South Africa’s freeway network are vital partners in SANRAL’s broader efforts to promote road safety through safer infrastructure, education and awareness campaigns.

### N3TC

The N3 Toll Road through KwaZulu-Natal is the primary road freight corridor linking the port city of Durban with the metropolitan hubs of Gauteng. Moreover, this route also carries high volumes of commuter traffic especially at weekends and during holiday periods.

The N3 Toll Concession prioritises road safety with a dedicated focus on partnerships and initiatives with the road freight and haulier sectors. A dedicated patrol service covers the route 24/7 and a customer-care line is operational to respond to emergency calls and coordinate activities among N3TC, municipal law enforcement and emergency medical and rescue services. Contact the 24-hour N3TC Customer Careline on 0800 63 4357 (0800 N3 HELP) or follow N3TC on Twitter @N3Route.

In recent years, the company has made significant investments in the upgrading of road infrastructure, including improved road signage and markings and the rapid deployment of teams to clean up crash scenes and repair damaged road surfaces.

A comprehensive database of hotspots and hazardous locations is kept, and this information contributes to more effective road management and law enforcement.

For the past decade, N3TC has provided post-crash support to victims of vehicle collisions through its Duduza initiative. With the help of community members and businesses along the route, the concessionaire offers assistance to transport victims to hospitals, arrange for the tow and storage of vehicles, and contacting family members.

### TRAC

The safety and wellbeing of road users is a primary concern for Trans African Concessions, which operates the N4 Toll Route that links Gauteng, through Mpumalanga, to the Mozambican border and on to Maputo.

TRACAssist conducts round-the-clock route patrols and provides roadside and emergency services free of charge to road users. This is linked to a dedicated helpdesk, which also coordinates the activities of first responders, medical services and traffic officials.

TRAC maintains close ties to local law enforcement units and regularly sponsors the purchase of emergency gear, high-visibility clothing and lighting equipment, which are vital for effective policing, especially in rural areas.

A pedestrian safety campaign is in place at several primary schools and children are taught the basic rules of the road through social media platforms and creative material that can be used in the classroom.

In the past year, TRAC made significant investments in the upgrade of road infrastructure to improve the safety and comfort of all road users. Cable barriers were installed along the median of the road to prevent illegal U-turns at interchanges, and paved emergency crossings were constructed at priority interchanges in Tshwane and Middelburg.

### BAKWENA

Strong partnerships between Bakwena and local communities in the North West contribute to the creative integration of road safety awareness campaigns with broader community development programmes.

The positive results are becoming apparent. During the 2018/19 holiday period, there was a reduction in the number of serious crashes – and resulting fatalities – on the N1N4 toll route linking Gauteng through the North West Province to Botswana.

Road safety is a year-round priority for Bakwena. It is involved in several initiatives designed to educate children, pedestrians and motorists on road safety. There are specific concerns about the presence of illegal cyclists on the busy freeways, especially at dawn and dusk.

The “Secure-A-Kid” campaign is a partnership between Bakwena and a non-profit organisation that focuses on children in road safety. A ‘Glow Kids Glow’ campaign involved the distribution of reflective beanies to learners who have to walk to and from schools.

The company is also working closely with provincial and local authorities to increase the visibility of law enforcement along the road, which includes road blocks where vehicles are checked for roadworthiness and overloading, and drivers are tested for alcohol abuse.
SANRAL is mobilising the support of communities, grassroots organisations, academics and the private sector to develop a comprehensive education and awareness programme on road safety.

Elna Fourie, SANRAL’s Road Safety and Awareness Manager, said: “The aim is to influence attitudes through road safety education and encourage safe behaviour on our roads, especially among adults who may have developed dangerous habits over the years.”

A comprehensive desktop study was recently completed and SANRAL has drawn from the best practices introduced by other countries in the world. Special attention was given to programmes that combine elements of law enforcement and technology with education and/or awareness campaigns.

The study highlights that such an adult education programme should have a multipronged approach reaching different road users, the different generations within communities and cater for all levels of knowledge and understanding of road use.

Learners in Grade 10-12 (FET) Secondary Schools in all nine provinces will soon be able to participate in a novel initiative that tests the maths and science skills of learners, while reinforcing vital development of safe road user communities.

SANRAL’s education and awareness programmes are targeted at schools in communities that live close to the country’s primary road network. Working with academics and educational authorities, the agency has developed teaching and learning materials that can be integrated into the regular school curriculum, from foundation phase to FET phase.

The new programme will engage learners and teachers in Grades 10-12. The learners will be challenged to devise road safety programmes to match a proposed infrastructure development programme in their area and test their ability to apply their maths and science skills – planning for safety issues that confront communities.

The intention is to turn this initiative into a competition at district and provincial levels that is linked to sponsorships and prizes for the schools that demonstrate the highest degree of skill and ingenuity.

This will now be turned into the development of a uniquely South African adult road safety education plan that meets the requirements of local conditions through consultations within the field of road safety and road user behaviour.

The plan can only be developed with a scientific study of current road user behaviour to use as a baseline, along with an investigation into the need for an adult road safety education programme and the implementation of such a plan using a structured, multipronged approach.

SANRAL is inviting registered non-governmental organisations in the fields of adult road safety education to submit suggestions that can contribute to the adult road safety education programme.

“Road safety is one of SANRAL’s pillars,” said Fourie. “We are committed to forming partnerships with all sectors of society to ensure we come up with workable solutions to promote greater safety on our country’s roads.”

The Safe Systems approach adopted by the UN in relation to its Decade of Action for Road Safety underpins everything SANRAL does. This approach requires taking into account that all humans make mistakes – and to build and develop systems that are forgiving when it comes to human error.

Therefore, SANRAL provides roads infrastructure that has been designed with all road users in mind. Road safety awareness and education programmes also form part of the Safe Systems approach – users must know how to use the infrastructure and have access to self-explanatory road environments.
Check your vehicle before you leave

The hybrid is with us. The electric option almost is. But we still drive petrol or diesel cars and – even if they are going out of fashion – we have to look after them to ensure they run efficiently and safely.

Driving a car which is in good condition does not safeguard us against all accidents but it does enhance the safety of the driver, passengers and other motorists. Basic maintenance will also improve your vehicle’s reliability and performance, save you repair costs and increase its resale value.

It’s not all that difficult. One just has to get into the habit of doing some basic, easy-to-do things regularly. Inspecting your car before hitting the road is one of the most important things you must do.

Wheels and tyres

Tyres are essential part of your vehicle. You need to make sure that they are all in good shape (the spare too), with enough tyre pressure for safe use. Checking your tyre pressure constantly can help you drive hours without trouble. It’s very important to have a spare wheel, in case of a flat on the road. Check for any damage and always be careful of potholes when you’re driving. Remember: you’re not necessarily going to burst a tyre in an area that’s safe for you to stop and ask for help.
These are steel breaking plates that carry the weight of the moving vehicle. If they have to carry heavy objects such as a caravan or many people, the extra weight can damage your brakes. So always make sure your car can manage the weight you’re shifting. Make it a point not to overload your vehicle. Another good safety tip is to make sure that your brake pads don’t make any funny grinding noises. If they’re making noises, you should change them as soon as possible.

Brake Pads

Lights

Always remember to test your lights, even if you’re travelling during the day. If it suddenly gets foggy or there’s a downpour, you need to be prepared and safe. Checking your lights means testing every light in your car – including your brake lights.

How you drive is also an important element in the proper upkeep of your car.

If you drive too fast, stop-start too energetically, brake too harshly and swerve around corners at speed – in short, drive like an 18-year-old who is trying to show off – your car’s condition will soon deteriorate.

Remember the slogan: look after your car and it will look after your safety and comfort.

Roadside Assistance

Sign up for roadside assistance services, for those unforeseen emergencies. The worst thing on a long drive is being stuck on the side of the road without help. Or in an area that looks dodgy. Having help a phone call away should be a priority. Your service provider should come to your rescue whether your spare is flat, you need a tow or just for a jumpstart.

WHAT’S YOUR KID PICKING UP FROM YOU?

STOP
WHAT HAS SANRAL’S MARKETING AND COMMUNICATIONS TEAM DONE TO RAISE AWARENESS FOR ROAD SAFETY? 

We developed an integrated communications campaign, named #WHOA! together with the road safety cluster. The message is to encourage road users not to drink and drive, drink and walk, text and walk or text and drive.

These messages are communicated over the Easter and December periods. And we used TV, radio, print, stadium branding, wall murals, cinema and airtime vouchers to drive interest. WHOA! targets both drivers and pedestrians.

WHAT NEW THINGS HAVE YOU INTRODUCED TO MAKE PEOPLE MORE AWARE OF SAFETY ON THE ROAD? 

We launched Road Safety 365, which talks to road users throughout the year. The aim is to encourage road users to make positive changes to their driving behaviour.

South Africa is an amazing country with a long list of wonderful accolades, but sadly, we also made it onto the list of ‘The 10 most dangerous places to drive’. To truly achieve behavioural change in a society, road safety campaigns cannot be seasonal.

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The script “Kids learn everything from you. Set a good example,” relayed the message in a subtle yet powerful way by sending a road safety message that included children. “To our children we often say: ‘Do as I say, not as I do.’ The problem is that children are great imitators. They always do as we do. They watch far more than they listen. So, if you are texting while walking or driving, you can bet your last penny your little child will someday be guilty of the same.

WHAT ARE THOSE ALL THE ROAD SAFETY AWARENESS CAMPAIGNS? 

In the last year we have run several campaigns to raise awareness and help change road user behaviour, including #Whoa and Road Safety 365, but also campaigns covering pedestrian safety and overloading of vehicles.

WHAT ARE THE BIGGEST BEHAVIOURAL ISSUES ON THE ROADS THAT NEED TO BE DEALT WITH? 

Definitely drinking and driving, texting and driving and texting and walking. Then there’s overloading of vehicles, disregarding the risks of driving at night – for motorists and pedestrians – and neglecting to use pedestrian bridges.

Realising the risks of these behaviours is the first step to protecting ourselves – and this is where successful awareness campaigns come in. We remind people that their behaviour on the roads can have far-reaching negative consequences that go beyond simply breaking the rules ‘just this once’. We remind them to think harder about what they are doing and correct their behaviour before it becomes life-threatening or injurious.

WHAT ARE YOUR FUTURE PLANS TO EXPAND ROAD SAFETY AWARENESS? 

The team will continue to reinforce the existing messages and attempt to get our sister road agencies to emulate them.

ANY ACTIVATIONS SET FOR THIS YEAR’S ROAD SAFETY CAMPAIGN? 

Well, as part of the integrated campaign, we carry out WHOA! activations during Easter and December. In early January, we extend these for the drive back.

WHY DOES SANRAL INVEST IN ROAD SAFETY AWARENESS CAMPAIGNS EVERY YEAR? 

The number of deaths on our roads increases every year. Road safety is one of SANRAL’s key pillars of operation and is afforded the seriousness it deserves. It is therefore important to keep all users of SANRAL roads safe and has the added benefit of impacting road safety on all of South Africa’s roads.

WHAT ARE SANRAL’S EXPECTATIONS OF THEIR ROAD SAFETY AWARENESS CAMPAIGNS? 

To change the behaviour on our roads, which will contribute to fewer crashes and fatalities.

WHICH ROAD SAFETY ADS DO YOU EXPECT TO HAVE THE MOST IMPACT ON SOUTH AFRICANS? 

All platforms are important to us, as each channel talks to a different target market and they all tie back into and support each other. That said, a visual interaction usually pulls at heart strings a bit more, so we’re expecting the TV ads to have the largest impact.