

# BY THE WAY



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Creating wealth through infrastructure

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## maths + science = SUCCESS

How do you ensure success? Boost skills in maths and science. The South African National Roads Agency (SANRAL) has made this just a little easier with its recent joint launch of a new chair in science, mathematics and technology education with the University of the Free State.



The roads agency's R30 million endowment over five years is seed money to establish the SANRAL Chair to help improve the quality of teaching in these vital subjects at township and rural schools. It will form part of the university's Schools Partnership Project (SPP), a flagship initiative launched by the vice-chancellor, Prof Jonathan Jansen.

Education is one of the key priorities of the South African government and SANRAL has for many years been offering scholarships and bursaries to high school learners and university students.

The success of the government's National Infrastructure Plan which promises to create thousands of jobs and

boost empowerment will hinge on skills dependent on mathematics and science.

Infrastructure is critical to strengthening key value chains across our economy by advancing service delivery, bolstering job creation and expediting economic transformation.

By partnering with the University of the Free State and establishing the chair in science, mathematics and technology education, SANRAL will help to ensure that South African students can measure up to international standards in the mathematical world. And pave the way for personal success.



FROM THE MINISTER'S DESK

## Welcome, By the Way

The South African National Roads Agency SOC Ltd needs no introduction. Everybody who uses a road knows SANRAL builds and maintains the national ones which are of international standard. The national routes are the only ones under the agency's supervision – which are 21 403 km out of the 750 000 km of roads in the country. Almost all SANRAL roads are tagged with an "N" - so N1, N2, N3 and so on. From time to time, provincial roads are incorporated into the SANRAL managed network.

SANRAL is however about so much more than highways - the agency works closely with communities through which its roads run, helps schools in the area, awards bursaries, looks after the environment, grows small, medium and micro-enterprises. In fact, SANRAL is proud of its high quality roads but especially of its involvement in community development.

This revived edition of By the Way attests to this. It is about people, and roads, it is entertaining, it is informative and an easy read available to all who drive on the national routes. Drive carefully and enjoy the read!

**Dipuo Peters**  
Minister of Transport



## Off the beaten track in Limpopo - top 5 highlights

1. Bela-Bela
2. Marakele National Park
3. Nylsvley Nature Reserve
4. Blyde River Canyon
5. Mapungubwe



## MESSAGE FROM THE SANRAL BOARD

Communication is at the heart of all good businesses - with its own employees but particularly with those who use its products and services. SANRAL takes this obligation seriously. It is imperative that we talk with those who use the roads we build and maintain. Thus this publication which sets out the many things beyond building roads that the national roads agency does.

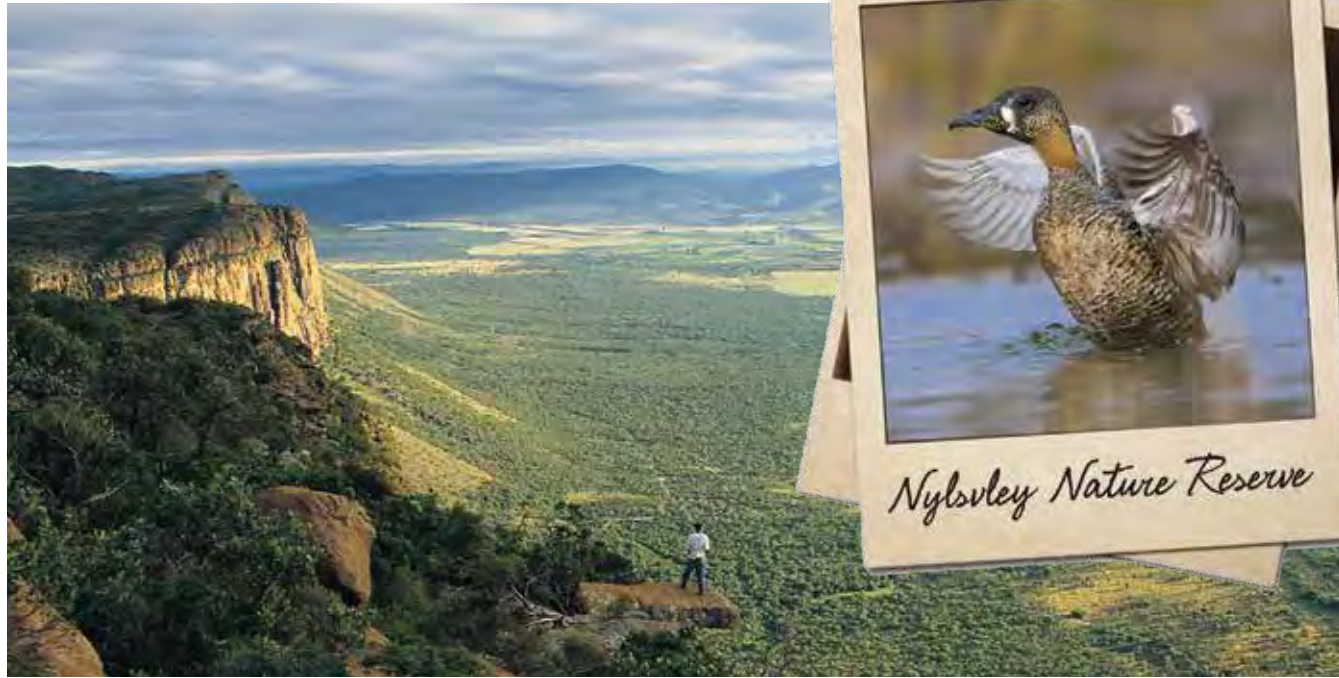
We are proud of the quality of the infrastructure we deliver as our mandate dictates. But we are just as proud of our involvement with the communities along those routes - not only while construction is going on, but also the involvement afterwards with so many aspects of their daily lives. We like to think that we make a contribution while working on the roads and also that we always leave a legacy.

This publication attests to the many faces that make up who SANRAL is.

As an outgoing member and Chairperson of the Board, it gives me great pleasure to see By The Way, which we once had as a magazine, making a comeback. I do hope you will find the content informative and valuable.

**Dudu Nyamane**  
Acting Chairperson of the Board

# Meandering along the N1 in Limpopo



Taking the N1 through Limpopo up to the Zimbabwean border is a long drive and not much to do or see along it. That is if you're in a hurry along this stretch of the national route which runs right through South Africa - from Cape Town to Beit Bridge, the border with Zimbabwe.

Should you take time and turn it into a proper road-trip, a delightful part of the country will open its welcoming arms to you. From hot mineral springs to the vast gorge in the Blyde River, the spectacular viewing from Wyllie's Poort to game farm after game farm - there is actually a great deal to do and see.

You can, of course, miss most of the towns alongside the N1 - Bela-Bela (formerly Warmbad), Modimolle (Nylstroom), Mookgophong (Naboomspruit), Mokopane (Potgietersrus), Polokwane (Pietersburg), Makhado (Louis Trichardt) and Musina (Messina): new names for old towns.

Just don't be in such a hurry. There is excellent and plentiful accommodation all along the various routes leading away from the excellent N1. Staying over can be an actual pleasure in of itself.

Just about a hundred kilometres north of Pretoria, Bela-Bela lies just off the N1. It houses some of the best known and popular hot springs in the country. Used for centuries by elephant and buffalo, but also the local human population, it became a state entity in 1873. It is now visited by 250 000 people a year.

Consider booking ahead of time, just to be on the safe side.

You could also drive on to Thabazimbi on the R516 and visit the Marakele National Park. You'll be able to view the Big Five and the largest colony of the endangered Cape Vultures in the world plus a wide variety of buck and bird. The roads are excellent and the accommodation affordable.

Back to the N1 and then off again to have a look at the Nylsvley Nature Reserve near Modimolle, the place to visit if you're a serious birder. If not, go anyway - there are up to 80 000 birds there at the same time. Not surprising, as the 4 000 hectare reserve has around 370 bird species.

You can then go back to the N1 via the nearby Mookgophong which also offers some hot springs which surface around the nearby Waterberg. Then on to Mokopane which probably has the best aloe display in the country - some

4 000 plants, a forest of colour in mid-winter when they flower.

Next is the provincial capital Polokwane - no longer a town but a bustling city, the commercial capital of the north where cattle ranches abound nearby, with a university on its outskirts as well as 2 000 hectare nature reserve and recreation park. It is also the gateway to the northern part of the Kruger National Park.

You'll get there via the spectacular Magoebaskloof with its winding road, indigenous forests and fly-fishing, and then through Phalaborwa. You ought really to take some time and go south to experience the Blyde River Canyon and its majestic 26 km gorge.

Again back to the N1 and Makhado with its famous Soutpansberg Hiking Trail. You can also head due east through great scenery to get to the Punda Milia gate, the northern most entry to the Kruger.

Then from the town itself it is upwards along the steep Soutpansberg and its remarkable Wyllie's Poort - two tunnels to take you through the mountain with some great views from the top, looking south even beyond Makhado.

Oh, not often thought of, but there are examples of San rock art in the region.

Then it is the land of the baobab and the mopane trees. Near the last town of Musina is a must: the remarkable archaeological heritage site of Mapungubwe, dating back to around 1200 AD - a world heritage site, described as the centre of the largest kingdom in the sub-continent before it was abandoned in the 14th century.

Then it is Beit Bridge, recently upgraded and modernised - once you're on it, that's the end of the N1. Think about it for a moment: almost 2 000 km of the best road in the world stretches away from you to the southern-most tip of the continent!

## MAPUNGUBWE SA's lost City of Gold



One thousand years ago, Mapungubwe in Limpopo province was the centre of the largest kingdom in the subcontinent, where a highly sophisticated people traded gold and ivory with China, India and Egypt.

The Iron Age site was declared a World Heritage site by the United Nations Educational, Scientific and Cultural Organisation (Unesco) in July 2003.

Mapungubwe is an area of open savannah at the confluence of the Limpopo and Shashe Rivers and abutting the northern border of South Africa and the borders of Zimbabwe and Botswana. It thrived as a sophisticated trading centre from around 1220 to 1300.

Mapungubwe was home to an advanced culture of people for the time - the ancestors of the Shona people of Zimbabwe. They traded with China and India, had a flourishing agricultural industry, and grew to a population of around 5 000.

Mapungubwe is probably the earliest known site in southern Africa where evidence of a class-based society existed (Mapungubwe's leaders were separated from the rest of the inhabitants).

The site was discovered in 1932 and has been excavated by the University of Pretoria and it has a rich collection of artefacts made of gold and other materials, as well as human remains, discovered there.

The most spectacular of these is a little gold rhinoceros, made of gold foil and tacked with minute pins around a wooden core. The rhino, featured in one of South Africa's new national orders - the Order of Mapungubwe - has come to symbolise the high culture of Mapungubwe. The rhino is also a symbol of leadership among the Shona people of Zimbabwe.

Mapungubwe's fortunes declined after the climate changed, resulting in the area becoming colder and drier, which led to migrations further north to Great Zimbabwe.

Article courtesy of [www.southafrica.info](http://www.southafrica.info)

# Joburg to the coast

### How interoperability will change long-distance travelling

It's what people in Gauteng do - zip down to Durbs for a long weekend, or better still, a longish holiday. It's easy to do. You just get onto the N3 and you're on one of the best roads in the world.

If you go east from Johannesburg for a dip in the lovely warm Indian Ocean, it can take you six hours to cover the estimated 570 km - plus stopping at every toll gate to pay for the road which is the result of a public-private partnership.

But, coming soon to a toll plaza on your route will be an alternative form of payment that will make stopping-and-paying redundant. It is NOT an extra toll. Charges remain the same. It is a way of making your road trip easier, and quicker, with no need to stop.

So, let's take a step back - or rather, let's pause for a moment and see how this advance in comfort travelling will happen.

With the South African National Road Agency (SANRAL) taking care of South Africa's national roads - not urban or provincial roads - the N3 is in a pristine condition.

These national roads are just more than 20 000. Of these only 15% are funded by tolling. The rest of the funds come from the national fiscus, that is taxes, to look after the remaining 85% non-toll roads. We all pay for those wonderful, world-standard national roads.

SANRAL follows international best practice and signed three public-private partnerships through which the private sector builds, upgrades and maintains roads. It gets its income from tolls. This is true of the N3 to Durban, the N4 to the Mozambican as well as to the Botswana borders.



Soon these roads will be interoperable. A long word to simply mean that a tag will open boom-down toll plazas without requiring you to stop-and-pay.

Here, again, SANRAL is a world-leader. In the United States the lack of interoperability led to car rental companies entering into agreements with toll companies to install their own electronic transponders to provide convenience for their clients. This led to higher costs - passed on to their customers.

In South Africa, there will be one tag and one account. This offers convenience for road users, unparalleled in most countries that have multiple toll collection operators.

It is already active on the inner-Gauteng highways and the Bakwena toll road, the N4 to the Botswana border. The evidence from interoperability between these two routes is clear: one tag, one account. Not a new toll, simply a way of making travelling easier and providing a convenient method of payment. Of course, the option to use a manual lane will still be there.

Eventually, this will be true for all the tolled roads in the country. **SANRAL does more to ease your travel!**

## MYTH VS. TRUTH

If it's out there, it must be true. Not exactly, when it comes to SANRAL. Well, in reality, not at all. Look at these myths:

<b>MYTH</b>	<b>MYTH</b>
There was no public consultation on e-tolling.	The national roads are being privatised.
<b>FACT</b>	<b>FACT</b>
Well, there seldom are enough responses from the public to any invitations to comment on draft laws. But in this case the matter went to court - which found there was sufficient consultation.	Not true - public-private partnerships to build, upgrade and maintain roads are in place. At the end of the concession contracts, the concessionaires will hand back the roads in excellent condition - at no cost - to the government.
<b>MYTH</b>	<b>MYTH</b>
Tolling revenue ends up in the coffers of a foreign company.	It is exorbitantly expensive to travel on the tolled inner Gauteng highways.
<b>FACT</b>	<b>FACT</b>
It cannot, as toll revenue is ring-fenced for the maintenance and improvements of the roads, and more importantly, for the repayment of the debt incurred for the construction of the toll roads.	No, there is a cap of R450 in place for light motor vehicles motorists and our survey has shown that 83% of people will pay no more than R100 a month provided they have an e-tag and a registered account.



# Melkbosstrand interchange

as good as new,  
and better



With cheers and hooting, delighted motorists shared their appreciation of the newly opened N7 Melkbosstrand Interchange. Melkbosstrand residents and frequent N7 users of the route have unequivocally supported the upgrades by SANRAL.

The newly completed interchange forms part of Phase 1 of the N7 upgrade, and includes the construction of the second carriageway to the Philadelphia intersection, as well as a second interchange at the N7-Philadelphia (Atlantis South) intersection.

One of the driving forces of the upgrade was road safety. Before, the stretch of road claimed numerous lives and seriously injured many more.

Despite more than 100 rains days affecting Phase 1 construction, the project as a whole is scheduled to be completed on time by the end of this year.

The project is a massive investment in the region. The first phase of the upgrade is valued at approximately R350 million. More than R35 million will be spent on SMME and black-owned enterprises and R45 million to create local jobs. More than 300 local people were employed and trained of which 203 come from the Atlantis community. Over the past 18 months they have earned R13.7 million in wages. Not only did the construction phase prove to be a job incubator for locals, this upgraded corridor now provides and enhances economic development to the northern parts of the Western Cape and beyond.

As part of SANRAL's strategic development plan for the country's primary road network, Phase 1 is the first of three phases which entails the upgrading of the N7 to freeway standard (the highest class of road) from the N7-Melkbosstrand Intersection all the way to Malmesbury.

The N7 will, in its final stage, be a dual carriageway freeway from the N1 to Malmesbury, significantly improving capacity and safety for motorists.

*The N7 will, in its final stage, be a dual carriageway freeway from the N1 to Malmesbury, significantly improving capacity and safety for motorists.*



Building a bridge across a busy road without interfering with the traffic, sounds like a challenge, but with SANRAL's engineering prowess not impossible.

The bridge in question is part of the Chota Motala Interchange across the N3 and is a major access route to the central business district of KwaZulu Natal's capital, Pietermaritzburg. It was a requirement that the new construction did not interfere with the heavy traffic on, and approaching, it - two years ago the daily average was already over 40 000 a day.

To meet this requirement, the construction company decided on an incrementally launched bridge, essentially building the bridge superstructure section by section and then launching them sequentially into their final position.

At a cost of R442 million the bridge is as elegant as it is structurally sound. Local labour was employed for areas such as traffic accommodation and concrete placing. A total of 132 local people were employed, resulting in 519 682 person hours of employment created at a cost of R13 439 212. In addition, 33 black owned SMMEs were employed resulting in a cost of R98 360 212.

The new interchange affected three kilometres of the highway, is part of the upgrade of the N3 corridor between Durban and Johannesburg and could in future form part of an eight-lane carriageway. It also upgrades the road with the same name that crosses the N3.

Among the highlights of this massive project are:

- Construction of a new seven-span "free-flow" directional ramp bridge - the one that was incrementally launched

- Demolition and reconstruction of the existing four-lane bridge over the N3
- Construction of a new seven-lane bridge in Chota Motala Road over the N3
- Construction of two additional lanes on both carriageways of the N3.

Increased long-term safety features of the project include reduction of accidents due to the free-flow design of the interchange plus adequate pedestrian accommodation using protected sidewalks and signalised crossings.

Upgrades at other interchanges in KwaZulu Natal also eased traffic congestion, reduced travel times and made for safer roads.

The upgrade of the Ballito Interchange on the N2 resulted in the bridge carrying six lanes. And in addition four sets of double lanes were added to the four sides of the interchange.

The EB Cloete Interchange or "spaghetti junction" as it is popularly known, will hopefully see the widening of ramps and an increase to four lanes on the N2 and N3, with the possibility of additional lanes being added later.

'Spaghetti junction' is a four-level interchange which provides access in all four directions to both national routes.

The KwaMashu Interchange lies at the intersection of the N2 and R102 and its improvement has had the usual and expected advantages, but in particular eased the life of commuters as congestion had been a major obstruction in these areas.

# Not a bridge too far...



## By the people, for the people

Since 1998, the work of SANRAL has made a major contribution to the lives of those who own it... Our South African people.

We've left no stone unturned to support our country's economy, by building and maintaining the very backbone of it: a solid national road network that creates opportunities for growth.

To this day, our roads facilitate the movement of people, goods and services through seamless connection of major cities, towns and rural areas.

In addition, just in the 5 years to 31 March 2013, SANRAL awarded R12 billion worth of contracts to SMMEs, R8,9 billion of which went to 5 494 black enterprises. Over that period, SANRAL's projects created 133 135 average equivalent full time jobs.



www.SANRAL.co.za

More than just roads





Based on a true story

## Without the Road Accident Fund, I wouldn't be me.

Sometimes I still think back and wonder what might have been. When my parents died in a car accident, everything in my life changed. I thought my dream of being a doctor was over but because of the Road Accident Fund, it wasn't. I know that without them, I wouldn't be who I am today.

The Road Accident Fund. We cover, compensate and rehabilitate road accident victims. You can come directly to us. For more information call 0860 23 55 23 or visit [www.raf.co.za](http://www.raf.co.za)

We want you to know us, but hope you never need us.



# Huguenot Tunnel near capacity

If you're more than a quarter of a century old, you don't think you need an upgrade. But if you were a tunnel, that's what people would be saying about you.



### Just ask the Huguenot Tunnel.

Opened in March 1988, it was not designed to carry the traffic loads it does now particularly not if safety standards are taken into account. During its first 25 years, 75 million vehicles passed through it. Traffic volumes have increased by 3% on average per year and if this continues the tunnel will reach full capacity by next year – or at the latest in 2016.

Clearly time for an upgrade is now, before capacity is reached.

There is no doubt about the economic need for the tunnel: in its first 25 years it has saved road users 13 million hours in travel time and the equivalent of four million barrels of crude oil. Just the fuel savings alone amount to R870 million.

The history of the tunnel is in fact intertwined with the need to have a safe gateway into and out of the Western Cape. The need has been and still is to cross the Du Toitskloof Mountains. In the mid-1800s the Bainskloof Pass took traffic across.

A century later the dream was to tunnel through the mountain as the original route was just too arduous. The Second World War delayed the next step - constructing the Du Toitskloof Pass.

Italian prisoners of war constructed the pass and it was opened in 1948. Actual planning for the tunnel started in 1973 and construction in 1984 with the opening in 1988.

Plans are afoot to upgrade the tunnel system by opening a second tunnel system which will allow for two separate passages with traffic in one direction only.

With full capacity approaching and safety fears increasing - anything beyond one light vehicle bursting into flames will mean a real possibility of a disaster – the time and need for an upgrade is obvious.

SANRAL is acutely aware of this but cannot proceed until the green light has been given for the N1/N2 Winelands Toll project. Objections to the project have ended up in court and the roads agency is awaiting the outcome.

.... and the Huguenot Tunnel's need keeps growing.

**Safety of motorists is still top need** - the safety of road users is a core priority of SANRAL and as the Huguenot Tunnel is close to capacity, concerns about this aspect are rising.

### Lighting



At present the first safety feature as motorists enter the almost 4 km long tunnel is lighting to compensate for the sudden plunge from bright sunlight into the tunnel. Thirty-four cameras inside the tunnel monitor safety and traffic flows which feed into an automated management system with alarms for stopped vehicles, fast and slow-moving traffic, traffic queues and wrong-way driving.

### Air quality



High levels of air quality are maintained by a powerful air conditioning system, which also eliminates emissions. The tunnel is manned and fully lit for 24 hours per day.

### Fire sensors



There are also fire sensors placed at 24m intervals to detect rises in temperature. Even the slightest rise will automatically be flashed to the Paarl Fire Department and there is also a fully equipped fire tender ready for deployment right there at the Western entrance to the tunnel.



# Aspirin for Gauteng commuter pain

Its symptoms are feelings of anger, despondency, stress, or in good and direct South African fashion: just feeling *gatvol*. There seems to be no cure and no relief: you face it day after day if you're on a highway in a big city.

Commuter pain, known to all who commute. An international affliction.

As roads get more and more congested, so it gets worse. The 2014 TomTom Traffic Index measures congestion levels in urban areas and it tells us that Cape Town is the most congested with Johannesburg a close second.

Now, just imagine what the situation would have been like if the inner Gauteng highways had not been vastly improved, extra lanes added and off-ramps becoming better. Traffic now moves slowly, but it moves at a steady pace.

If the improvements had not been effected, the situation would have been much, much worse.

IBM, an international company, has measured how people react when they face traffic congestion regularly: stress levels increase, there is more anger, health is negatively affected, and productivity goes down.

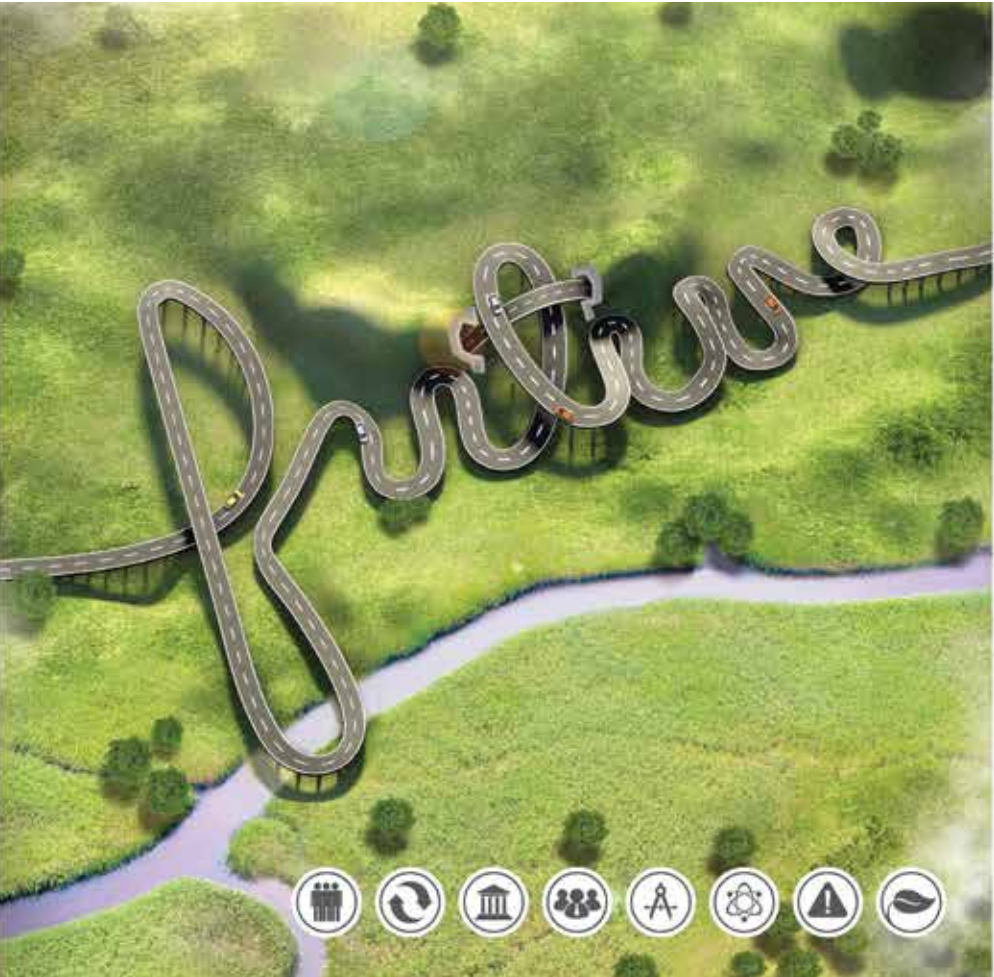
By building better roads or improving, SANRAL helps, but there comes a time when that is not enough. Increasing information and making it easily available can make a lasting difference regarding the improved infrastructure.

SANRAL is doing it too - helping traffic to flow smoothly by making traffic information instantly available, telling drivers about conditions ahead on the road, having incident teams up and ready through the day and night.

What really helps is that there should also be a good and efficient public transport system. In Gauteng, the provincial and city authorities are cooperating to make this a reality.

Commuter pain - it doesn't go away but a SANRAL-aspirin certainly helps.

It has been called commuter pain; a disease that strikes all over the world - New York, Moscow, Toronto, Beijing and, of course, Johannesburg, and increasingly Cape Town.



## It's what we build

We all dream of a better future. For ourselves, our families and our country.

SANRAL, as part of the National Development Plan, is improving and expanding vital road infrastructure. In the process we are creating jobs, transferring skills and developing opportunities for all South Africans.

We are proud to be a part of the National Development Plan, because we know that roads are more than just roads, they pave the way to a better future.

www.SANRAL.co.za



# Mthatha bridge

a boom for the region



The centre-piece of a series of infrastructural interventions by the South African National Roads Agency SOC Ltd (SANRAL) in the OR Tambo District Municipality was the construction of a new bridge and re-aligning of two streets in Mthatha.

This is part of a range of projects by the roads agency in the region - Family Math, community development, road safety education, upgrading of interchanges, changing roads into dual carriageways.

These interventions underline what SANRAL is about - not only constructing first-class roads but uplifting communities in the areas where the agency is active, thereby leaving a two-fold legacy.

This bridge is located in Mthatha, from the north - to the east of the CBD. The project consisted of building a new bridge over the Mthatha River parallel to the existing bridge on the N2 and converting two streets through Mthatha to one-way streets to relieve the traffic congestion of the N2 through the town.

Sprigg Street now runs south from the Kokstad side over the new bridge and Madeira Street (the existing N2 route) north from East London side over the existing bridge. These two routes meet up again in Nelson Mandela Drive.

The cross streets between Sprigg and Madeira Streets have also been upgraded. As a community project, a new public transport interchange (taxi rank) was built to relocate

the taxis that were using one of the streets earmarked for upgrade.

The project helps to relieve traffic congestion through Mthatha, especially on the N2 route - a problem which dates back several decades. Construction started in March 2011.

It is a five-span bridge with the deck supported by precast beams with a concrete deck slab over the beams. Both abutments are built with reinforced earth wall panels with a concrete seating beam on top. The piers are reinforced concrete piers.

The road pavement design consists of selected layers, a bitumen stabilised material (BSM) sub-base, a bitumen treated base (BTB) and an asphalt wearing course.

The budget for the project was just more than R100 million. The long term positive effects include improved safety and time-saving resulting from smoother traffic flow through the CBD, so benefitting Mthatha residents and shopkeepers as well as N2 road users.

Another part of the SANRAL-legacy is the use of emerging small companies, as it is done wherever the roads agency is active. Just more than R7 million was used to employ 26 SMMEs and at one stage more than 200 people were given work. The investment in local labour also exceeded R7 million - which in itself was a boon for the local economy. The total project cost came in at R103 million.

*The new bridge and the consequent local positive effects are thus a real boon for the whole district.*

Mthatha is the main town and administrative centre of the OR Tambo District Municipality and has a population of more than 100 000, straddling the vital N2, which links Cape Town, Port Elizabeth and Durban.

The new bridge and the consequent local positive effects are thus a real boon for the whole district.

The district municipality is mostly rural, with homesteads scattered along ridges and valleys. Its rolling hills, rivers, mountains in the north and the Indian Ocean in the south give it great potential as a tourist attraction. Added to this is the fact that the Wild Coast with its marine bio-diversity has been recognised by the WWF as one of its global eco-regions.

Against this background, the building of the bridge and the subsequent easing of traffic flows take on additional importance.





# Unqualified audit is like boerewors

**The money spent on the country's national roads is carefully and honestly monitored. That's reflected in SANRAL's unqualified audits from the Auditor-General.**

And yet a clean audit technically does not exist. It's just something South Africans have made up, like boerewors. That's how the Minister of Cooperative Governance and Traditional Affairs, Pravin Gordhan, explains the term.

Much better, he says, to talk about an 'unqualified audit', sometimes with findings and other times without. But, really, there isn't a squeaky-clean audit.

Whatever term one uses, though, SANRAL's record of handling public money is something to be proud of. Boerewors may have a tempting smell once it's on the coals, but SANRAL's bookkeeping leaves no smell.

In the light of severe and continuous public criticism (deservedly so) - also by ministers like Pravin Gordhan - of the very qualified audits that too many institutions get, it is well worth asking: how does SANRAL manage to be such an exception when it comes to 'unqualified audits'?

The explanation is a bit technical in places, but this is how it all hangs together:

The national road agency is managed in three clusters: finance (Inge Mulder), engineering (Koos Smit) and corporate services (Heidi Harper). It has four regional offices: northern in Pretoria under Ismail Essa, western in Bellville under Kobus van der Walt, southern in Port Elizabeth under Mbulelo Peterson and eastern in Pietermaritzburg under Logashri Sewnarain.

All report into the head office, which is also in Pretoria.

There is a further division and this is really fundamental: toll and non-toll operations are dealt with separately. In lay terms this means that toll roads must look after themselves and for the rest money comes from the National Treasury.

This means toll roads are self-funding - on three stretches of national routes, which are tolled, SANRAL has three concessionaires who are contracted to return the roads to the state free of debt and in a pre-determined condition at the end of the concession. This will enable the roads agency to operate these roads - the N3 from Gauteng to Durban, the N4 to Maputo and the other leg of the N4 to the Botswana border -without having to make major improvements for several years.

The agency's own toll road business is funded through borrowings on capital markets and bonds issued are listed and traded on the JSE. National Treasury approves the borrowing limit - now almost R48 billion - of which some R38 billion in guaranteed.

SANRAL maintains a sound liquidity buffer to limit possible risks in this area. This, as well as the once-off grant received from Treasury, have ensured that the agency could service its debt and maintain its toll roads during the two years, prior to the commencement of e-tolling, when it could not tap the capital markets.

Bond sales since then have been positive.

Non-toll national roads, on the other hand, are financed through parliamentary appropriations during the vote of the Department of Transport.

SANRAL is proud of the fact - and it is widely accepted as being fact - that it not only builds and maintains excellent roads but also works within the appropriate legislative

prescriptions in all aspects of its work - particularly the financial side.

The agency, in simple terms, is prudent in how it spends the money made available to it and it rises on its own. And that's an unqualified statement! So, perhaps not a 'clean audit' but as close as one can get to boerewors.

## From reasonable to wasteful...

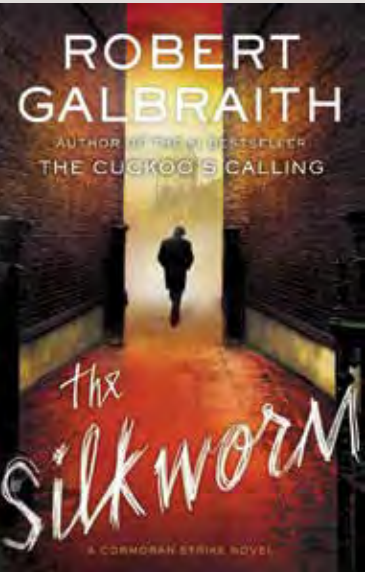
Auditing terms can sound mysterious when one first hears them. Listening closely, though, they become clear: 'unauthorised, fruitless and wasteful' and 'reasonable care' tell you what your accounts should look like. Thus: 'unauthorised' means doing something you don't have the authority to do, 'fruitless and wasteful' is doing something which does not have the desired results and ended in waste. 'Reasonable care' says one has to apply one's mind carefully and to be cautious. All of this is what some institutions do not do. But SANRAL does.

Shorten the journey by reading a good book. Or two.

## Book Review

The itinerant lover of books has a hard time lugging her/his reading material wherever and whenever they move. Books overload luggage - whether for train, bus, plane or car. Thus electronic books are heaven-sent. Compile a whole library to accompany you on your travels - the e-reader is a staunch and accommodating co-traveller.

Two recent publications make excellent companions - both available on Kindle. *The Silkworm* by Robert Galbraith and *I Am Pilgrim* by Terry Hayes. Galbraith is (for those not in the know) the pseudonym of JK Rowling, the prize-winning British author of the Harry Potter fantasy series. She has written 3 non-Hogwarts novels: *The Casual Vacancy*, *The Cuckoo's Calling* and now *Silkworm*. *I Am Pilgrim* is a debut for Hayes, an Australian, and a former journalist and award-winning screen-writer. It has been hailed as the most exciting thriller since Frederick Forsyth's *The Day of the Jackal*.



**The Silkworm**  
By Robert Galbraith

Novelist Owen Quine goes missing and his wife is desperate. Has he just gone walkabout (as was his inking before) or is his disappearance sinister? She contacts private detective Cormoran Strike to find and bring her husband home.

Strike is a wounded military veteran; a rough and tumble personality but also sympathetically understanding and intelligent. He is ably assisted by the young and determined Robin Ellacott. Both lead complicated lives but this does not deter them in finding the vanished Quine.

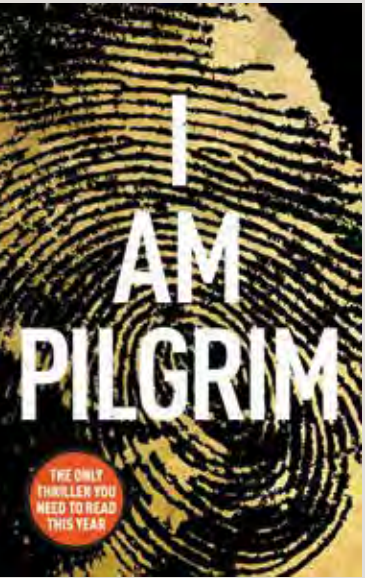
Who does turn up ... as a grisly corpse, murdered in bizarre circumstance. And it seems that many could have done the deed. Apparently Quine was a self-centred author who had just completed a scandalous manuscript. It points a poisoned finger at friend and foe, colleagues and family. Hidden secrets are revealed and could be disastrous if published for the world to read.

Everybody is upset and revengeful.

Strike and the intrepid Robin must solve all. He limps on a prosthetic leg through London, trying to solve the case with logic, a fully-developed sense of suspicion and unorthodox approaches. Galbraith takes them (and the reader) through a labyrinth of happenings and stops and turns and dead-ends and jolting surprises. She is a skilful author with great depths of imagination (as Harry Potter proved) and her characterisations are complex albeit believable.

Take this ride with Galbraith and Cormoran. It will tax you intellectually but will keep you entertained and on your toes. And enjoy her artful prose and the multi-layered exits and entrances of her story.

And remember the explicit title of the novel: *Silkworms* are boiled alive for their silk...



**I Am Pilgrim**  
By Terry Hayes

Hayes quotes John Irving, Oscar-winning author of screenplays: "Irving says that writing a movie is like swimming in a bath and writing a novel is like swimming in the ocean".

Hayes, an ex-journalist and screenwriter (a.o. the Mad Max films) approaches this debut of his like and ocean-swimming Chad le Clos---he dives, goes into depths never examined, rides the surf, wallows like a dolphin. He is a natural in the novel-writing waters and has been hailed as the next best debutante after Frederick Forsyth with his *Day of the Jackal*.

His diving board is the question: Is it possible to commit the perfect crime?

And the only one who might know is the one who calls himself the Pilgrim. After all, he is the author of the definitive book on forensic criminal investigation. He writes it under a pseudonym. Nobody knows who he is. He is the anonymous author of a crime manual that will come back to be the ghost at his heels or the nasty step on his toes.

It is a story with a baffling beginning. In a rundown New York hotel room the naked body of a woman is discovered in a bath. She lies face down in a pool of acid. Her features are burnt off by the acid, her finger prints are erased, her teeth are extracted. Identification is completely lost. Why? Who is she? Why was this done to her? Who could be so sadistic? Who is this text-book murderer?

Only the Pilgrim knows. The Pilgrim is the codename for a man who does not exist. He once headed a secret group of espionage agents for the US Intelligence. He is not an operative anymore, he is retired, the best there was but now unknown. But before the Pilgrim goes into seclusion, he writes that book on the forensics of crime. New York PD detective Ben Bradley discovers his secret and persuades the Pilgrim to help with the murder investigation.

And the reader is taken on a roller-coaster ride which takes him from Mecca to Turkey from the wilderness of the Hindu Kush mountains to atrocities committed in Saudi Arabia and a Nazi death camp in Alsace. It is a race against time because the Pilgrim is on the heels of one who could solve the murder puzzle; one who could be the perpetrator. This man also carries a nom de guerre: The Saracen.

The Saracen grew up in a world where his father was beheaded for criticism of the Saudi regime and its king. He dedicates his life to Islam and plots to eliminate those who fight against his fundamentalist ideals and who support the abhorrent Saudi order.... Namely the USA.

Hayes novel races with breakneck speed to a cataclysmic ending. And the reader has to keep apace with this epic and unpredictable tale.

It will sure keep a vice-like grip on you throughout your travels.





People, drivers and pedestrians, cause the vast majority of road accidents. That's a proven fact all over the world. South Africa is no exception, which is nothing to be proud of.

# Road safety is about people

People, drivers and pedestrians, cause the vast majority of road accidents. That's a proven fact all over the world. South Africa is no exception, which is nothing to be proud of.

But something can be done to address this problem. And is being done. At the forefront is the South African National Roads Agency with a programme which has a multitude of aspects, one of which is to focus precisely on that cause of most accidents.

Educating people about road behaviour is where it really starts. SANRAL understands that it is a long and slow process. People just don't change the way they drive or walk along a road overnight. It takes time - and education.

The reality is that many people are sceptical or even superstitious about certain safety measures, such as wearing a safety belt. These barriers have to be broken down first before the public can and will believe that crashes can and have been prevented by correct road behaviour.

The roads agency's road safety education programme provides holistic solutions, embracing enforcement, engineering, education and social approaches. Interventions include improving pedestrian routes (40% of all road deaths involve pedestrians), speed-control enforcement and community involvement, such as helping children walk to school safely.

The programme also provides training for officials, youth and community groups.

A strong focus is working with schools – teachers and pupils. The programme is called Road Safety Education (RSE) and is done at project level at sites identified by the agency's regional offices and are linked to road safety hot spots and community development projects.

The RSE aims at grades 1-9 and FET grades 10-12 and is in line with education departments' guidelines. During workshops educators are given road safety manuals and classroom materials as well as information on the

importance of road safety education and the link to the national curriculum.

The approach is very basic. For example, reading and understanding road signs, how to cross a road safely, how to use public transport, how to cycle safely and planning a safe route to school.

Yet road safety is about much more than education. For SANRAL, improved road safety for all road users is a key element of its core business to provide a superior national road network that promotes mobility and economic development.

Although the national road network is recognised as being world-class, its continuously expanding footprint, changing land-use patterns and the need to provide a more forgiving

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roadway, imply that there will always be room for improved and innovative engineering solutions.

SANRAL has both a proactive and retroactive approach.

Proactively, the agency continuously evaluates the national road network against a set of standards and norms during project design, construction and routine road management.

Reactively, it identifies and addresses high-incident areas. In many cases solutions require close partnerships with education and traffic law enforcement entities to achieve a safer road environment.

For example, infrastructure takes the needs of pedestrians into account by constructing pedestrian and bicycle paths, providing effective traffic-calming messages, building pedestrian bridges and creating safe access to communities living next to the national road network.

Building safer roads, keeping pedestrians in mind, educating road users - all fine and good, but accidents still happen. What happens then is of utmost importance.

The entire national road network has incident management systems in place to ensure optimal coordinated response to incidents.

In plain English, as much as possible must be done as soon as possible - tow vehicles out of the road, provide ambulance aid and clear the incident scene.

Efficient responses to an incident are thus crucial. SANRAL uses Intelligent Transport Systems (ITS) to manage its freeway operations. The use of CCTV video surveillance on urban freeways to detect the occurrence of an incident and notify the relevant emergency authorities results in speedier responses.

Freeway Management Systems (FMS) have already been deployed in Gauteng, KwaZulu-Natal and Western Cape and are being expanded and enhanced to ensure that responses to any incidents are even more efficient.

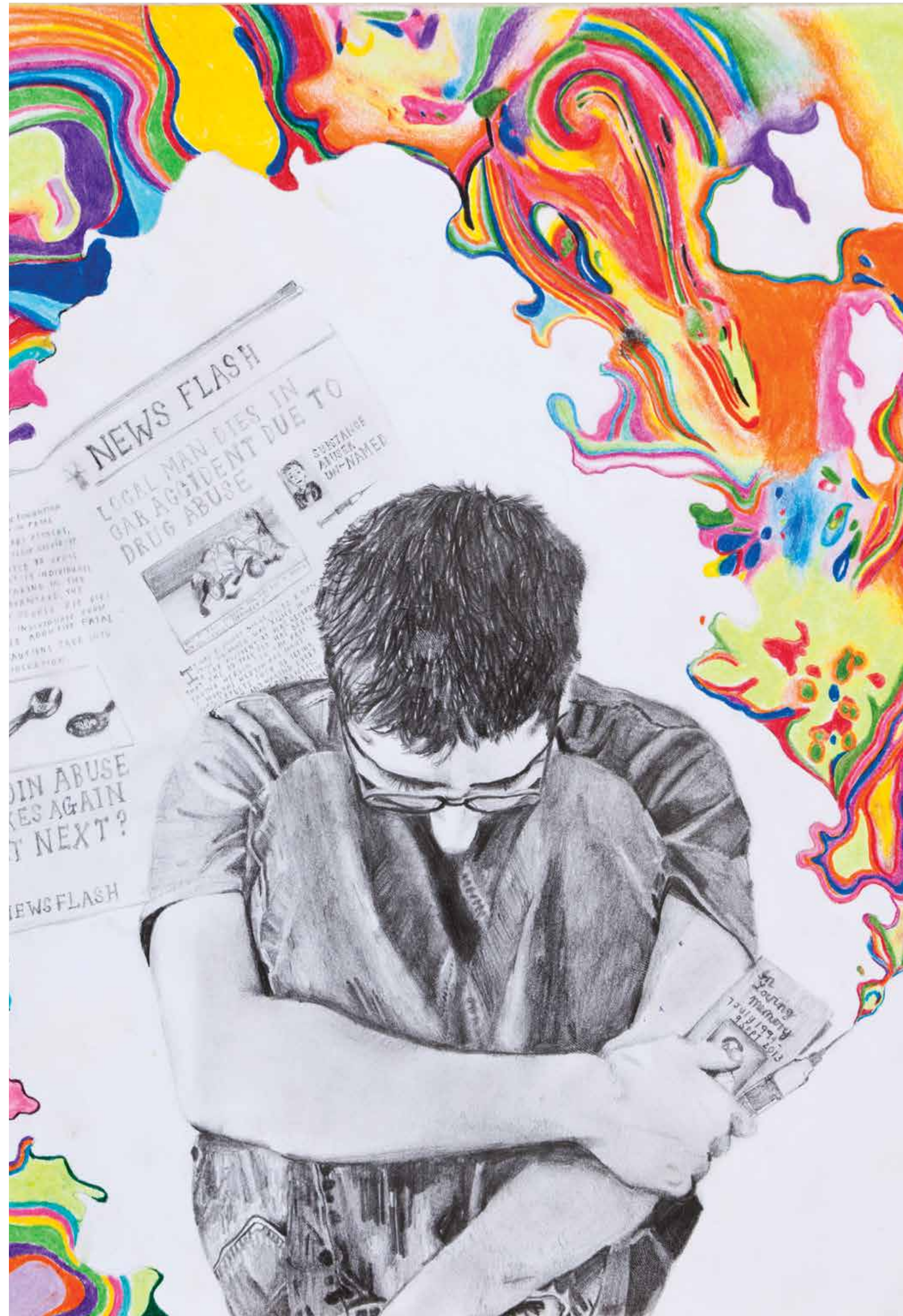
In the minds of many, the national roads agency is just that - an agency which looks after the country's main roads. It does, of course - but it does so by making the roads safer through good engineering, excellent road management and essentially putting peoples' safety way up there.

## SANRAL for roads and people.



With a strong message of "save a life" ChekiCoast is an imaginative campaign launched by SANRAL to promote roads safety among younger audiences on campuses and schools in South Africa. It aims to change attitudes towards road safety among a new generation of road users and thus contribute to a reduction in accidents and road deaths on the country's roads.









# Private sector helps to build roads and people

If it's best not to go it alone, go out and get help. That is exactly what SANRAL has done. It entered into partnership with three private companies to develop, fund, operate and maintain three sections of the national road network. These tolled sections amount to 1 288 km of the 3 120 km of tolled sections of South Africa's national roads.

The Bakwena Platinum Corridor Concessionaire (Pty) Ltd is responsible for toll roads between Pretoria and Bela-Bela on the N1 and between Pretoria and the Botswana border on the N4. Bakwena forms part of the important Trans-Kalahari link between Walvis Bay and Maputo and is entering its thirteenth year of operation.

Its upgraded Toll Collection System is now fully interoperable with SANRAL's Transaction Clearing House (TCH). In February 2014 there were 1 038 921 Gauteng Open Road Tolling (GORT) e-tags active on the Bakwena system. Over 12 million transactions were processed by the TCH with a value of over R20m.

Interoperability along all tolled roads is planned for the future, which will make life easier for road users and is expected to be hugely successful, as the Bakwena example proves.

The N3 between Heidelberg in Gauteng and Cedara in KwaZulu-Natal is operated by the N3 Toll Concession (N3TC) while Trans African Concessions (TRAC) looks after the N4 which runs from Pretoria via Komatipoort east to Maputo. On all three routes there is constant upgrading and maintaining of the infrastructure to the tune of hundreds of millions of rand as well as close cooperation with communities living along these roads.

As part of the Swaruggens regeneration, Bakwena constructed two sidewalks and enhanced the overall management of storm water while continuing to support the Chaneng Business Centre.

It is also involved in charities and sponsorship, big and small. Some of the more significant include support for Mohau House which looks after people who have been affected by HIV/Aids, the Thusanang Early Learning Centre where children of unemployed parents are helped, the Pink Drive

through which employees can attend breast and prostate cancer awareness sessions, the Groot Marico Bosveld Myl, the annual Toy Run and the annual charity golf day.

Following an approach by the South African Red Cross Society a team of volunteer community members are being trained to respond to general health and injury issues, as well as to disasters. The initiative will also build health and safety capacity in the community.

N3TC's Touching Lives Corporate Social Investment (CSI) programme spans four provinces - Gauteng, Free State, Mpumalanga and KwaZulu-Natal and has supported over 58 corporate social investment projects along the N3 Toll Route. Its focus is on education, road safety, tourism, enterprise development and more.

Apart from these, there were 45 training-related projects as well as the Singakwenza's Early Child Development programme which works with local community caregivers and focuses on education.

In a different field there is the hugely successful Old Mutual joBerg2c starting in the south of Johannesburg and finishing nine days later at Scottburgh at the coast. It is part race and part adventure. A community-driven formula has been adopted with the ultimate effect of uplifting communities by providing a fool proof way to raise money for local schools, churches and charities. Every organisation that works on the Old Mutual joBerg2c is paid by the organisers. From road crossings to watering points, it is a way for these communities to raise money and work together.

TRAC, too has a number of corporate social initiatives, which it runs along the N4 route and in Mozambique, such as a comprehensive BBEEE training programme, which also included an audit and issuing of BBEEE certificates; ongoing Support for the Takheleli Primary School at Matsulu that serves 1 100 learners from this rural community; and support for the Kweni Basin Education Trust which supports schools in the Schoemanskloof area by funding the placement of graduate teachers and improving facilities.

## SANRAL's world-renowned PPPs

SANRAL has been the pioneer in pursuing and sustaining successful public-private partnerships (PPPs), which have rendered substantial dividends over the years for South Africa.

SANRAL has three PPPs with its concessionaires – the N3 Toll Concession (Pty) Ltd (N3TC), the N1/N4 Bakwena Platinum Concession Consortium (BAKWENA) and the N4 Trans African Concession (TRAC). This enables it to reduce the cost of transport, provide safer and more reliable road infrastructure and build the economy of South Africa and its neighbours. The concessionaires are contracted to return the roads to the state free of debt and in a pre-determined condition at the end of the concession period.

This will enable government to operate these roads without having to make major improvements for several years after the concessions.

These meatballs are filling and packed with protein and goodness to keep you going on the road.

## Padkos

### Egg-filled meatballs

(makes 5 meatballs)

- 5 eggs, hard boiled
- 500g minced beef
- 1 medium onion, grated
- 1 tomato, grated
- 3 cloves garlic, crushed
- 1 tsp ground paprika
- 1/4 tsp ground Pimento Allspice
- 1/2 tsp ground coriander
- 1/4 tsp ground cloves
- 1 1/4 tsp nutmeg
- 1 tbsp apricot chutney
- 1 tsp salt
- 1/2 tsp white pepper
- 2 eggs, beaten
- 2 tbsp vegetable oil

Combine all the ingredients together and mix well.

Peel the eggs and form the meatballs in balls around each hard-boiled egg.

Cool in the fridge for 30 minutes.

Pre-heat the oven to 180 C.

Pour some olive oil in a baking dish and put the meatballs in.

Bake for +- 40 minutes or until meatballs are brown and cooked.

Let them cool before packing.





# How we grew with SANRAL

Developing and expanding small, medium and business enterprises lies at the heart of how the government sees job creation in the country. SANRAL has over many years been deeply involved in doing exactly that.

Essentially the roads agency uses as much local labour as possible, assists small businesses, is involved in skills training and always leaves a solid footprint behind it when a specific project is completed. Developing Africa Consulting CC, owned by Nico Kruger, is an SMME that has benefited from SANRAL's work packages.

Nico currently recruits 50 employees to assist with road construction projects. Among its primary tasks is the development of efficient drainage systems.

Nico has only positive remarks about his relationship with the agency:

"SANRAL has developed us as a company by equipping our team with essential skills and training, resulting in us being considered for additional pipeline projects," he says.

"SANRAL has been good to us. My staff was provided with transport to the work site, given valuable lessons on safety as well as information on quantity surveying relating to construction costs and contracts. This has improved our understanding of the various facets of the construction industry."

Nico says his company's participation in the projects have given his company and staff a steady income. "I thank SANRAL for the positive growth of my company. Working on SANRAL projects has given my business strategy and greater clarity."

Since the company started to work on SANRAL projects it has experienced considerable growth and a constant work flow. He was able to create new jobs by hiring new permanent staff. He now has a dedicated safety officer on board and five team leaders who can successfully execute contracts on their own.

Lindelwa Madyibi says the roads agency has enabled her to grow her emerging civil engineering firm and pursue her goal of turning it into one of the largest black female-owned companies in the field.

Lindelwa is the owner of Yavela Yona Trading Enterprise, a

civil engineering firm based in Mthatha in the Eastern Cape which has been involved in the construction of houses, schools and roads since 2005.

With a staff complement of 10 people, her company was subcontracted by SANRAL to help develop the N2 national route between rural Viedgesville and Sithebe. The company's scope of work involved stone pitching – a technique to interlock large stones to create small irregular steps that blend into the landscape.

Other activities included the construction of walkways and gabions, which are typically wire mesh baskets compactly filled with rocks and carefully wired together to stabilize steep slopes and prevent erosion.

"Thanks to SANRAL, we are now able to perform a variety of tasks. The four months of training that the agency offered us provided tremendous support, not to mention an essential learning curve for the team."

"We were taught how to calculate construction material quantities, develop work plans and how to read and interpret construction drawings. My company has benefited from the training which we continue to apply in our day-to-day work," says Lindelwa.

She is grateful for her company's exposure in the construction industry and the mentorship provided.

Lindelwa says she will not lose sight of her goal to build one of the largest and most prominent black female-owned civil engineering companies in the country.

As this was her first project with SANRAL, she hopes to grow with the agency and continue to build her company's credibility on future projects. She now has the capacity to offer other SMMEs the opportunity to join her company as a stepping stone to gain valuable knowledge and exposure in the challenging construction industry.

With the confidence placed in her company by SANRAL she is now ready to deliver on large-scale projects as a primary contractor.

# High Technology to handle road incidents



**Even on the safest of roads, incidents will occur - a vehicle will stall in mid-traffic or, worse, a driver will be distracted and bump into the vehicle in front of him. That can cause huge disruptions to traffic, may lead to material losses and even serious injuries.**

Essentially, just building an excellent highway is not all a roads agency has to do. It also has to manage it, to ensure the safety of road users but also enhance the flow of traffic.

SANRAL does this through the Central Operations Centre at Samrand along the N1 between Johannesburg and Pretoria. It is the operational nerve centre of the e-toll system for the roads agency. It is from here that the Gauteng Freeway Management System (FMS) is operated.

It uses high definition cameras which are all linked to this

command centre. They monitor the country's first multi-lane free-flow toll system. The system is managed by Electronic Toll Collection (ETC), providing road users with a smoother and safer journey, and is an important contributor to keeping South Africa's economic hub moving.

Improved lighting, real-time signage and management of the traffic flows are elements in enhancing road safety while making the N1 between Johannesburg and Pretoria user-friendly due to instant information being available to road users.

Traffic flow monitoring also highlights immediately where a road incident or accident is occurring, or has just occurred, and activates SANRAL's on-road services – providing medical responses and towing services while reducing the impact of incidents on the flow of traffic.

These services are decentralised at strategic positions across the road network to allow for a rapid response to incidents. The services are operated 24 hours per day, seven days a week. Information about traffic conditions is also available via twitter (@ittrafficgp).

The COC has 1 300 employees, working with a software system of which 90% was developed locally.

There are also freeway management systems in the Western Cape and KwaZulu-Natal.

So, when you're on the road, for business or leisure, keep an eye out for the traffic messages that may just make your trip easier.

## Comparison of the three FMS operations

Gauteng	Cape Town FMS	Kwa-Zulu Natal FMS
<ul style="list-style-type: none"><li>Spans 230km</li><li>183km of fibre optic cables</li><li>49 variable message signs</li><li>245 cameras, 20 wireless cameras on the R21</li></ul>	<ul style="list-style-type: none"><li>Spans 155 km</li><li>150 km of fibre optic cables</li><li>52 variable message signs</li><li>246 cameras</li></ul>	<ul style="list-style-type: none"><li>Spans 120 km</li><li>140km of fibre optic cables</li><li>26 variable message signs</li><li>137 cameras</li><li>57 radar vehicle detection units</li></ul>

SANRAL i-traffic twitter handles	
CAPE TOWN	@CapeTownFreeway
GAUTENG	@ittrafficgp
KWAZULU-NATAL	@i_trafficKZN

## ICAD

### INTERNATIONAL CIVIL AVIATION DAY

# 2014

**Co-operating on Global Aviation Progress: Celebrating 70 Years of the Chicago Convention**

The Department of Transport, in partnership with the Northern Cape Provincial Government and key aviation industry stakeholders, organised under the banner of the Joint Aviation Awareness Programme, will be hosting the 2014 International Civil Aviation Day celebration in Kimberley.

**DATE: 7 DECEMBER 2014**  
**VENUE: KIMBERLEY AIRPORT NORTHERN CAPE**

Department of Transport  
REPUBLIC OF SOUTH AFRICA

Province of the Northern Cape  
REPUBLIC OF SOUTH AFRICA

SAMP  
SOUTH AFRICAN MARITIME PORT AUTHORITY

AIRPORTS COMPANY  
SOUTH AFRICA

SOUTH AFRICAN AIRWAYS  
A SOUTH AFRICAN COMPANY

AT&NS

CIVIL AVIATION  
AUTHORITY





# Dreams built by SANRAL

Keeping vehicles safe on excellent roads is what SANRAL does. Less known is that it also gives people a leg- up. And it is happy to help women grow into what too often is seen as a male environment - road building in its many facets.

Two who can attest to this, are Kerisha Govender and Nonkululeko Nzimande.

Doing vacation work on road construction projects has helped Kerisha to make up her mind about a future career. Transport engineering beckons in the future for this final year student at the Howard Campus of the University of KwaZulu-Natal.

She is especially grateful towards SANRAL which not only provided her with a bursary to fund her tertiary education, but also helped her to find work over the holiday periods with various civil engineering companies.

Together with other SANRAL bursary holders she also gets opportunities to take field trips to road construction projects where they are briefed by project managers and civil engineers about the nature of the work being done. This has helped to strengthen her resolve to continue with her studies for a Master's degree and specialising in transport engineering.

Kerisha attributes her academic progress to a combination of hard work and perseverance. "The key is to stay focused and not to be influenced by potential negative aspects of university life," she says.

But it is not all work and no play for the diligent Kerisha. In her spare time she enjoys relaxing with family and friends, reading novels and playing the guitar.

Equally diligent is Nonkululeko whose maxim is: "Never give up".

She is a SANRAL bursary holder at the University of Pretoria. She is in her final year of study towards a degree in civil engineering.

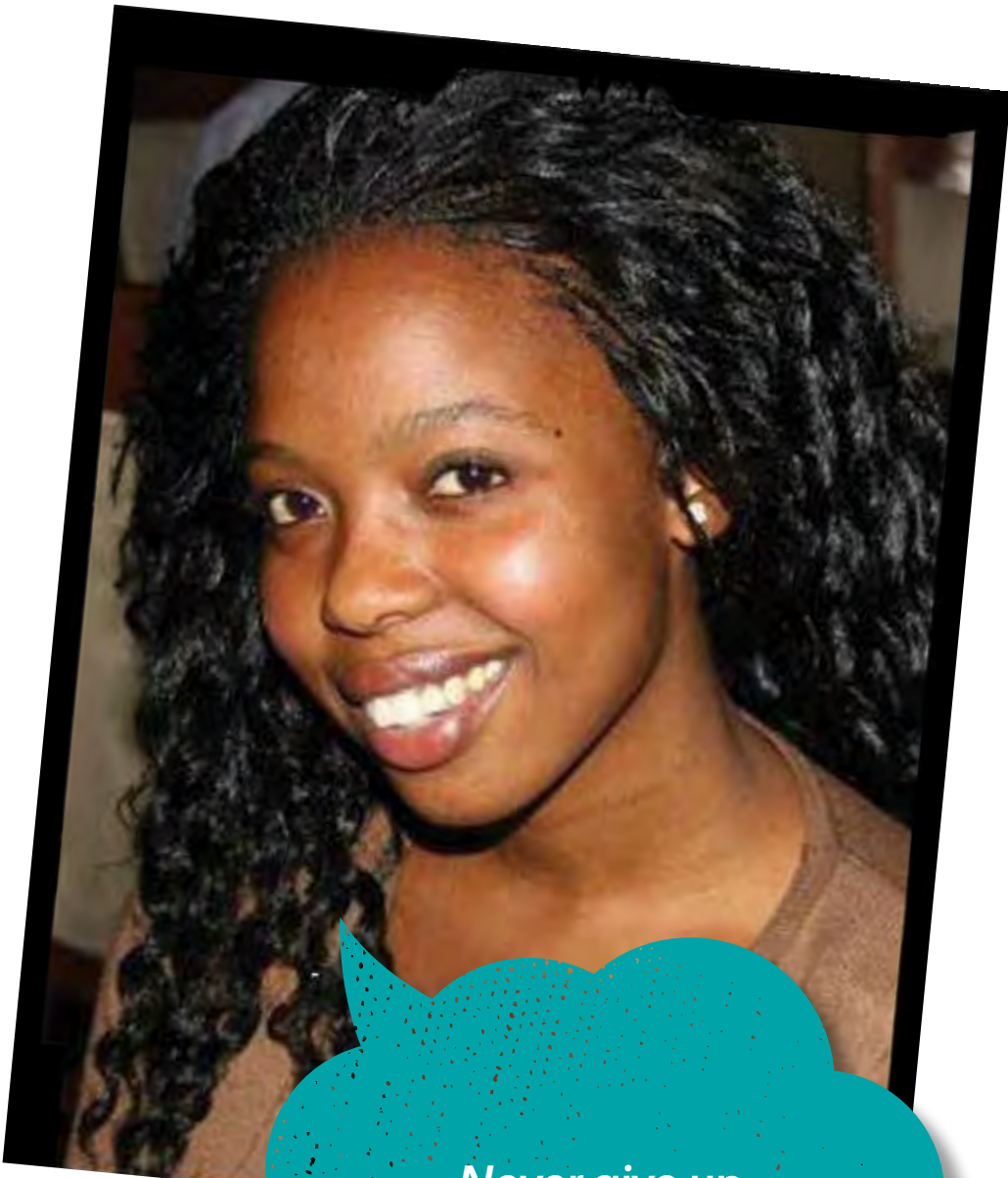
SANRAL has made a significant impact on Nonkululeko's studies, granting her a bursary that covers course fees, accommodation as well as an allowance. She has had this bursary from her second year and says: "When I was in first year, I really struggled without the bursary. Since I received support from SANRAL, it has allowed me to focus on my studies rather than stressing about finances – especially the allowance that did not seem important, but helps more than I expected".

In her spare time, Nonkululeko enjoys hanging out with friends and watching movies. She has also joined several organizations on campus that enable her to be more involved in society. The various student societies allow her to do community work, including speaking to high school students in disadvantaged areas, inspiring and motivating them to take the next step in their education.

She says that an engineering degree, like life in general, is not easy, and everyone is bound to struggle and sometimes fail. When something goes wrong, Nonkululeko emphasises that it is vital to try again until you reach your goal. In addition, she advises that it is vital to love what you do, because if you don't you are not always going to give it your all.

It is this passion that drives her towards her goal of success. When she graduates, she wants to pursue a career in Pavement Design. After completing an MBA, she wants to be a senior engineer and then one day aims at being a director in a top firm.

Dreams, built by SANRAL!



Never give up



The key is to stay focus and not to be influenced by potential negative aspects of university life

# Changing a road to save plants

Realigning a road and a ramp is how far SANRAL will go to save indigenous and endangered plants. It made the road more expensive but it saved some of the country's precious plant heritage.

These far-reaching steps were taken by the national roads agency when it upgraded the N7 in the Western Cape between Melkbosstrand Road and Atlantis. Conserving the and the Swartland Shale Renosterveld was a significant environmental challenge as both were affected by the widening of the road and the construction of new interchanges.

An environmental assessment had found that the vegetation was deemed to be vulnerable to critically endangered - and that mitigation measures would not reduce the loss of these highly valued conservation species.

The only way was to realign the road, despite the cost implications. At Melkbosstrand the alternative alignment crossed over the existing road before looping back to

reduce the direct impact on the vegetation in question, thereby saving some 25 000 square metres of these endangered species.

But not all could be saved, so the rest was relocated to a site identified in consultation with the City of Cape Town.

The loop of a ramp at the Atlantis Interchange was reconfigured to a larger radius, thus maximising the area to be conserved within the interchange. The roads agency has taken responsibility for their long-term conservation too.

Particular attention was paid to the drainage mechanisms to ensure that the hydrological regime of the area will not be significantly altered by the road.

# Aloes get special treatment

The approach to the aloes is typical of how seriously SANRAL takes its responsibilities regarding the biodiversity along the national routes.

They were lauded by Pliny the Elder in the first century AD, used by the ancient Greeks and Romans for medicinal purposes and are found along very many of the national highways in the country – where they get special treatment from the South African National Road Agency SOC Ltd (SANRAL).

Aloes is what it is about, some of the endangered kind, others not, but all protected by SANRAL when it builds, upgrades or maintains the excellent N-routes that criss-cross the country.

The best example of how the roads agency handles these well-known succulents is along the N2 at the Keiskamma River in the Eastern Cape between East London and Port Alfred and the new bridge across the Vaal River at Warrenton in the Northern Cape and the consequent realignment of the N18.

The existing bridge over the Keiskamma was widened, a new one built across the Green River and the stretch of the N2 connecting the two was upgraded. This affected the Aloe ferox in the area. It is not on the endangered list yet, but may become so unless trade in specimens of this species is strictly regulated.

It is also the Eastern Cape's provincial plant.

Aware of this, SANRAL prepared a nursery at the beginning of the project and all the affected aloes were relocated there and will be replanted, mostly in the Keiskamma River Pass, when the project is completed later this year.

At Warrenton the Aloe grandidentata, which is not on the endangered list at all, was treated in much the same way.

Discovered on site, the succulents were rescued and relocated outside the construction area and were replanted so that the ecosystem that existed before construction was restored as much as possible.

The approach to the aloes is typical of how seriously SANRAL takes its responsibilities regarding the biodiversity along the national routes.

It gets rid of exotic plants as much as it saves indigenous ones. The basic approach is to improve and maintain the roads to serve the country's economy, but not by damaging the environment.





# Ode to the dorpie

Lebohang Thulo writes about her favourite pastime exploring South Africa's small towns and the winding roads that take us there

**Is there anything more beautiful than the spontaneous getaway? The kind that only takes a week to plan, but you feel the benefits for a long time after?**

Don't get me wrong, travelling to far off and exotic locales has its own irresistible charm but the beauty of local travel can't be denied. You travel just far enough to leave home but still close enough to arrive at your destination in a couple of hours (ideally under three hours). And because we are so spoilt in South Africa with our scenic natural surroundings, those few hours spent on the road are an absolute pleasure.

But the real draw of a quick getaway has to be visiting the many charming small towns in every corner of the country, and the chance to explore the unfamiliar and my personal favourite, a stay at a B&B.

If you need further proof that holidays are good for you, scientific research shows that among the benefits of a vacation is that you sleep more and better when you are away from home. There is even evidence that vacations reduce our risk of cardiovascular disease and improve overall health.

There are of course many other reasons to embark on such a trip. Whether you choose to travel in the name of friendship or family. One of the best reasons, however, has to be love. Nothing can test the strength of a new relationship more than you asking for a bathroom break at every Shell garage on the way, or him playing DJ with the music selection.

For every dorpie waiting to be explored there is a highway to take you there. Every town is beautiful in its own way, but like people, small towns were also not created equal.

## Clarens, Free State

Take the town of Clarens for example. Set in the picturesque Maluti Mountains in the Free State. Clarens has been South Africa's tourism darling for many years and continues to attract more than its fair share of visitors. The town is popular largely because of its central location, its artsy vibe and its participation in the growing craft beer movement (the town plays hosts to the annual Clarens Craft Beer held in February).

The distance between Clarens and Johannesburg and Bloemfontein falls just under the three hour mark (for

Durbanites it's four hours, but who is counting?).

Getting to Clarens from Johannesburg is a relatively simple affair. The majority of the traffic on the N3 may be from northerners heading to Durban's warm waters, but many people would be surprised to learn how many other exciting spots this highway leads to.

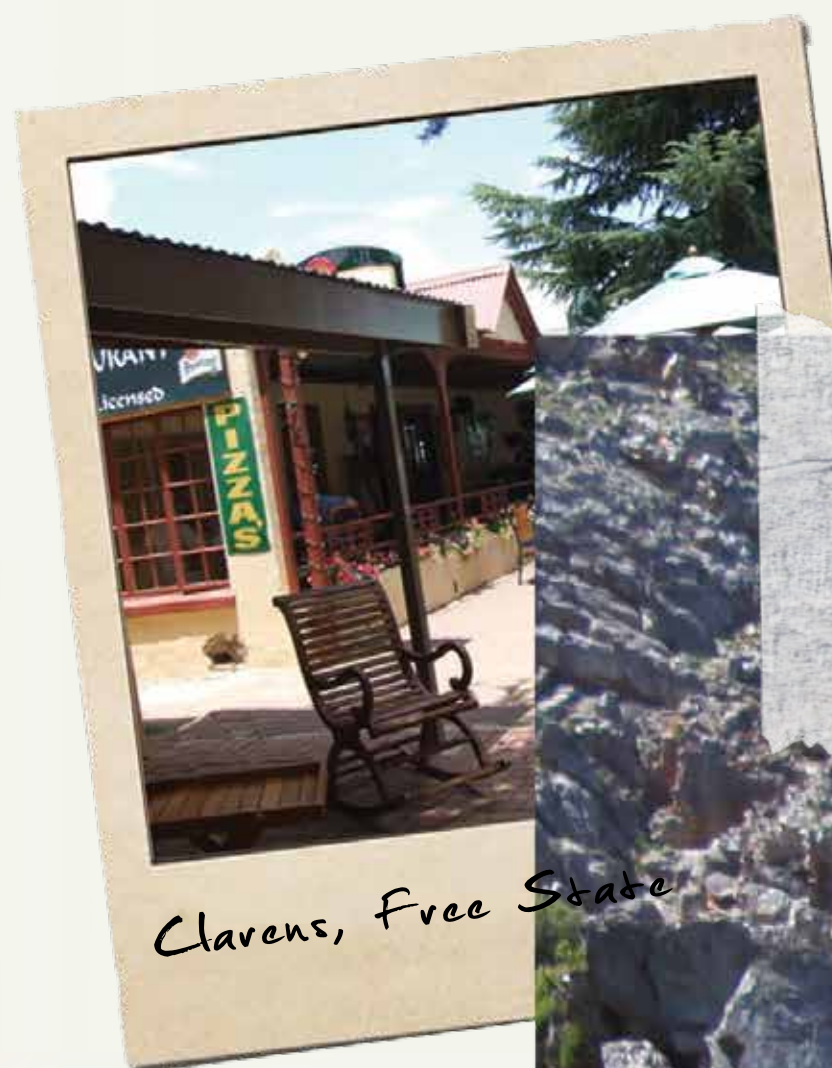
If you are going to spend time on a highway then make sure it's the N3. With its flat and gentle curves, this picturesque road is dotted with farms with occasional

mountain view. The N3 starts in Durban in Kwa-Zulu Natal, runs through the Free State and Gauteng provinces and Mpumalanga.

You know a highway is popular when it boasts its very own Twitter profile (@N3Route). The account has over 35 000 followers and offers a range of updates from news and weather as well as travel tips.



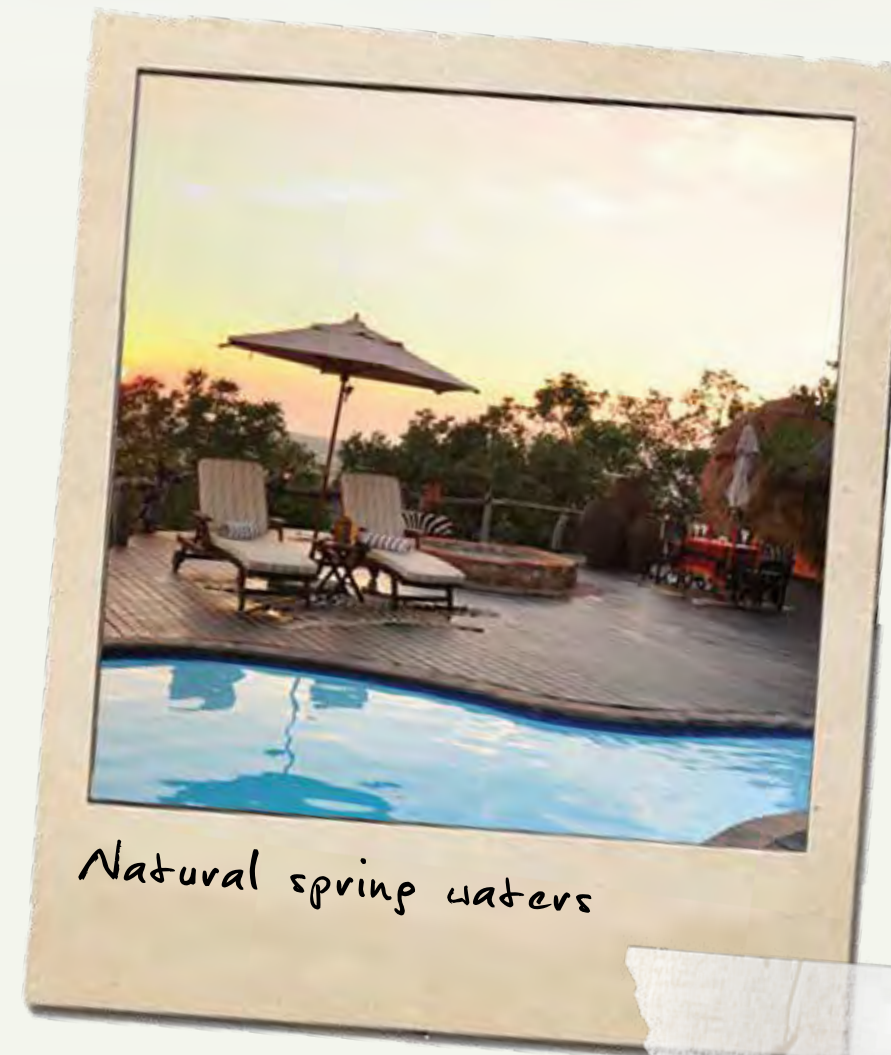
Lebohang Thulo



Clarens, Free State



Golden Gate Highlands National Park, Free State



Natural spring waters

## Hermanus, Western Cape

Not to be outdone, the N2 highway has its own treasures. Just less than two hours away from the city of Cape Town is the charming seaside village of Hermanus. This town, well known for whale watching, is the perfect hideaway and despite its popularity with tourists has retained its quaint rustic character, complete with authentic fisherman cottages and craft markets.

However the real highlight of the trip between Cape Town and Hermanus has to be Sir Lowry's Pass. This mountain pass crosses the Hottentots-Holland mountain range between Somerset West and the Elgin valley. At its summit it stands at 920m and offers a stunning view of Somerset West and False Bay.

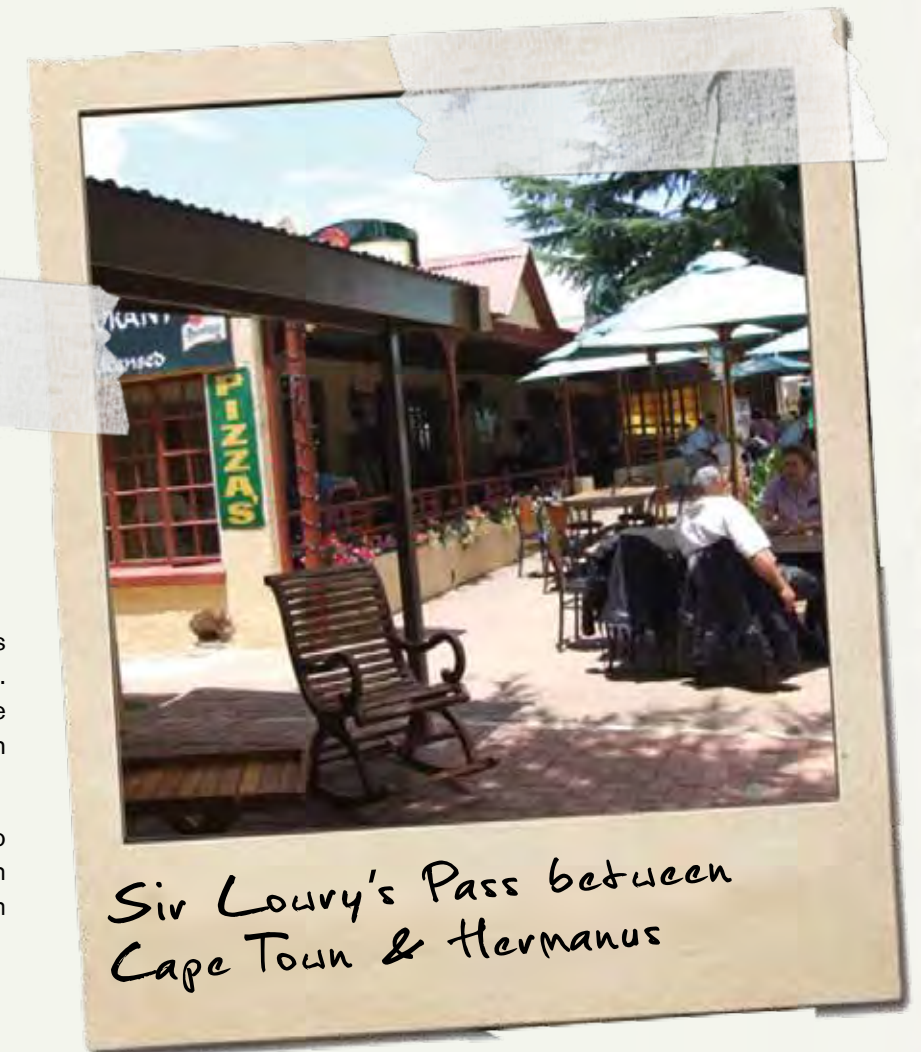
## Bela Bela, Limpopo

Just under two hours away from Johannesburg and an hour away from Pretoria on the N1 is the town of Bela Bela in the Limpopo province. The town owes its existence to the immense hot spring that gushes to the surface at 53°C.

Set in the foothills of the beautiful Waterberg mountain, the town is a water lover's paradise. The natural spring waters (which are believed to have healing properties) have been turned into pools and bathing areas at various health and holiday resorts.

Bela Bela is also known for its hiking trails, with difficult trails for the more experienced hikers. Trials over the massive mountain range and deep into the kloof. There is also the chance that you might see some wild life, this area is home to over 20 antelope species.

Remember whatever takes your fancy, whether its mountains or water springs, go out there and explore your local dorpie. You are only a couple of hours from an adventure.



Sir Lowry's Pass between Cape Town & Hermanus



## End the trend

Texting and walking seems harmless enough, but if you're not looking where you're walking it's easy to take a step in the wrong direction - and into danger.

Your friends will still be online, your status update will wait for you and that clever tweet isn't worth dying for.

Don't text and walk - it may write you off.



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More than just roads



Games and puzzles to keep you entertained on the long road

Captivate & Fascinate

Sudoku

			3			4		
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	8		5	6	4			9
		1				2	7	
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Across clues

- A1 Persons who travel to work
- K10 Piece or portion
- K1 Abbreviation for doctor
- P10 Algerian popular music
- N1 Permanent, enduring
- B11 Present capital of Tanzania
- C2 .... and fro
- N11 Preposition (used as links with nouns)
- I2 Plant native to SA
- Q11 Post communication
- S2 Preposition: in contact with the surface
- 12 Computer player
- A3 Landslide debris usually after heavy rain
- G12 Most northern entry to Kruger
- G3 Come first
- C13 Hand-held pointer (Judaism)
- M3 Dugout canoes from Okavango Delta
- I13 Fair-skinned Hindu male
- A4 Abbreviation for ultraviolet radiation
- N13 Past tense of lend
- E4 Female sheep
- S13 Pronoun – refers to person speaking
- I4 Ready to eat fruit
- A14 Abbreviation for Universal Time
- N4 Person who possesses
- H14 Wet deposit of earth
- A5 Roadside hotel for motorists
- L14 Mouth (slang)
- G5 Stationary abstract construction – artistic
- P14 Assistance
- C6 Propels the blood through body
- A15 Traffic congestion survey
- I6 Untruth

- I15 An enclosure (African)
- M6 Member of teaching staff at university
- N15 All right
- Q6 Dimensions of something
- Q15 Infant
- B7 Sixth sol-fa tone
- A16 Period of time
- G7 Unit of measurement
- F16 Feature above the eye
- N7 Kind of music popular in townships
- M16 Straw hat
- A8 Cape Town licence plate
- A17 Part of finger
- D8 Method for transmitting motion
- H17 Spun by spider
- I8 Mammal valued for its fur
- L17 System of roads
- Q8 Abbreviation for Lupus Erythematosus
- C18 English naturalist, evolution theorist
- A9 Unusual or peculiar
- E9 Any of the ten belt grades in martial arts
- J18 Indicating time period midnight to midday
- I9 Internet domain name for Angola
- N18 Meat from a pig
- L9 Egyptian god
- S18 Abbreviation for each
- O9 Hibernating large animal
- B19 First name of Star Wars hero
- A10 ....rama (three-dimensional scene)
- I 19 South African slang for brother
- G10 Utensil for liquids
- Q19 Abounding in fresh air
- A20 SANRAL bursar: name and surname

Down clues

- A1 Upright post or pillar
- L1 Second sol-fa tone
- A8 Type of fish
- L4 ... Alamein (scene of Allied victory in WWII)
- A12 Richest province
- L8 Form of exercise based on unarmed combat
- B3 Pear-shaped fruit, yellow-green flesh
- M2 Abbreviation of Standard Model
- B7 Expression of derision at affectation, pretentiousness
- M5 Abbreviation of Augmented Reality
- B14 Teachings in synagogues (Hebrew)
- M9 Abbreviation of
- B19 Imitation of Santa's laugh (singular)
- M16 To ... or not to ... (Shakespeare)
- C1 Name of bridge which is boon to region
- M19 The wizard of ...
- C9 Despondent or pessimistic
- N3 Combining form of egg or ovum
- C15 Open space (Pakistan or India)
- N6 Name of washing powder
- D1 Flightless bird
- N10 Booth or kiosk where toll is collected
- D5 Word for eye (Scottish)
- O1 Toll road to Botswana
- D11 Past tense of deal
- O11 Exclamation of distaste or dismay
- D17 Thin or gaunt
- O15 Maori tribal meeting place
- E3 Less tense or rigid
- P3 Contact or connection to a surface
- E11 Australian river
- P9 Abbreviation of emergency room
- F1 Thank you (slang)
- P12 Unequal quantities in medical prescriptions
- F8 Car association
- P16 Male cat
- F14 To bury or embed deeply
- Q1 Chief port of Tanzania (former capital city)
- G3 Fynbos is major vegetation of which province
- Q13 River in central Italy
- H16 Possess
- Q19 Sumerian sky god
- I1 National roads agency
- R3 Abbreviation of operation room
- I8 South Africa's lost city of gold
- R6 Inhabitant of Iberian peninsula
- I19 Abbreviation of Black Empowerment
- R14 No light / opposite of
- J4 Member of people of South-East Nigeria
- R19 One's psychic persona
- J12 Extinct flightless bird
- S1 Expression of denial
- J17 Sound dogs make
- S5 Submachine gun (Israeli)
- K1 Small village or town (South African)
- S18 Before
- K12 Chemical symbol for Argon
- T1 Little biting insect
- K15 Belonging to me
- T8 Hydrocarbon oil duty
- K18 Cow sound
- T17 Fifth month

Competition

Enter to win one of three MP3 players. Simply take a picture while driving on SANRAL roads, caption it and include #My SANRAL Road Trip and share on Instagram, Facebook or Tumblr.

Judges decision is final and no correspondence will be entered into.

Crossword

some answers can be found in By The Way

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
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