2020

INTEGRATED REPORT

VOLUME ONE

LEADER IN INFRASTRUCTURE DEVELOPMENT

SANRAL

BUILDING SOUTH AFRICA THROUGH BETTER ROADS

The South African National Roads Agency SOC Limited
Integrated Report 2020

The 2020 Integrated Report of the South African National Roads Agency SOC Limited (SANRAL) covers the period 1 April 2019 to 31 March 2020 and describes how the Agency gave effect to its statutory mandate during this period.

The report is available in print and electronic formats and is presented in two volumes:

- **Volume 1:** Integrated Report is a narrative and statistical description of major developments during the year and of value generated in various ways.
- **Volume 2:** Annual Financial Statements and the Corporate Governance Report.

In selecting qualitative and quantitative information for the report, the Agency has strived to be concise but reasonably comprehensive and has followed the principle of materiality—content that shows the Agency's value-creation in the short, medium and long term.

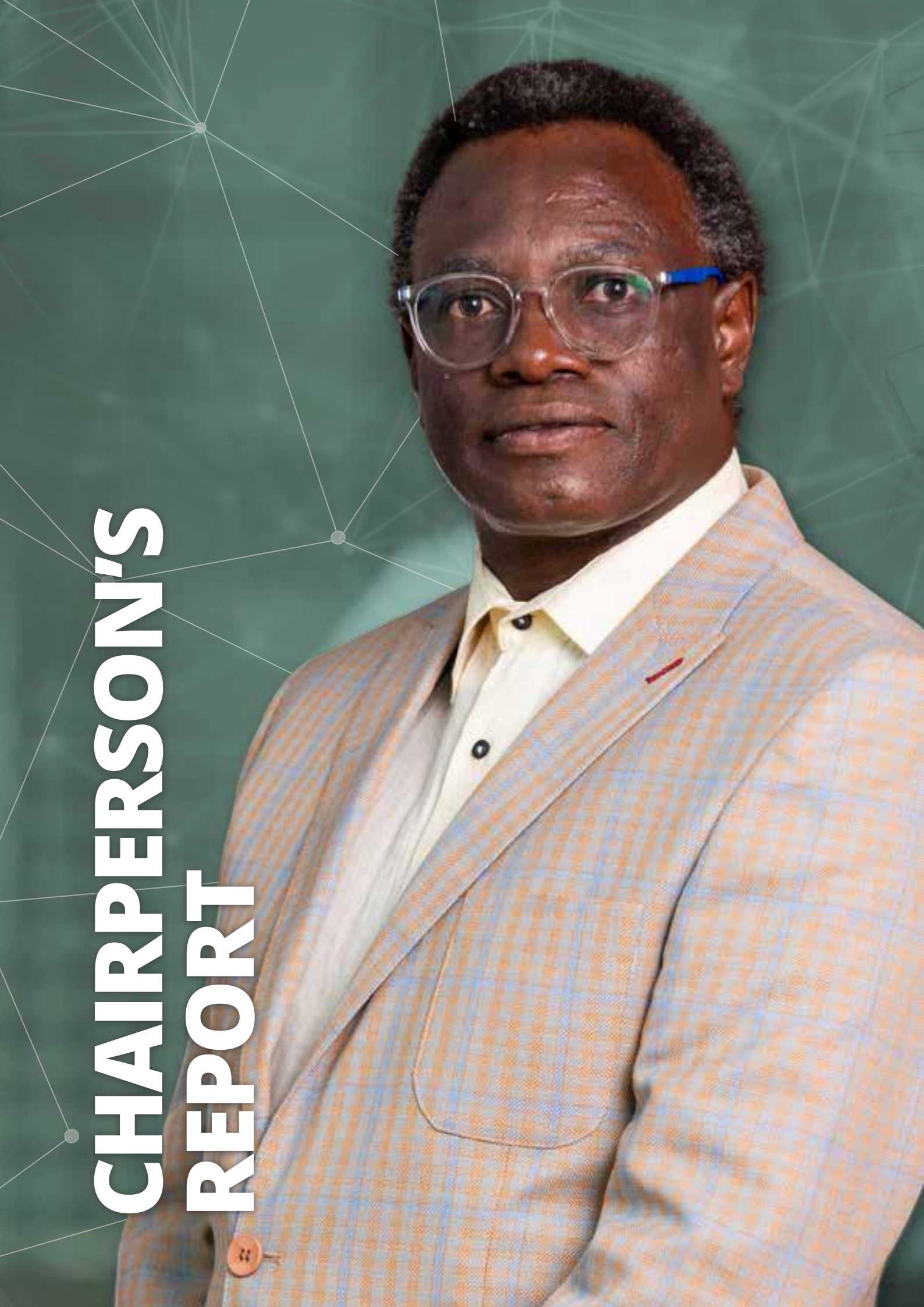
The South African National Roads Agency SOC Limited | Reg no: 1998/009584/30

THE SOUTH AFRICAN NATIONAL ROAD AGENCY SOC LTD

INTEGRATED REPORT

Volume One

CHAIRPERSON'S REPORT



Themba Mhambi
Chairperson, SANRAL

It is our privilege and our pleasure as the Board of the South African National Roads Agency SOC Limited (SANRAL) to once again fulfil our reporting obligations to the South African public, this time specifically, for the financial year 2019/2020.

While the 2019/2020 financial year ended in March 2020, the Board has determined that the Integrated Report for the period under review could not ignore the significant developments related to the novel coronavirus, or COVID-19. As we moved into the last quarter of the period under review, the world was confronted by one of the most serious health and economic crises of our time, leaving in its wake a massive swathe of loss of life and ability to earn a living on the part of most people.

As the first cases were identified on our shores, the government took swift and decisive action to contain the spread and "flatten the curve" while preparing to deal with the forecast health emergency.

Given its responsibility for the country's extensive national road network providing key links between cities and provinces for essential medical, food, and other supplies, SANRAL immediately formed a COVID-19 Taskforce. It was tasked with leading, communicating, and directing the Agency's response, with addressing service continuity, and in supporting frontline responders, all the while ensuring that SANRAL employees and the workers within the Agency's ecosystem remained safe.

The Board would like to pay tribute to the CEO and our workforce who, under difficult and demanding circumstances, did not drop the ball and ensured the seamless continuation of our operations.

While the World Health Organisation recognised and applauded the benefits of the early lockdown and adjudged them effective in containing the initial spread and impact of COVID-19, the devastating economic impact looms large over South African society. The government, in collaboration with the private sector and other donors, made significant efforts to create economic and social relief programmes for those worst impacted. The reality is, however, that like many countries emerging from the pandemic, the economic fallout is profound, far-reaching and long-term. COVID-19 has created global uncertainty and fundamentally changed the world in which we live.

In announcing the government's post-COVID-19 economic recovery plan on 21 April 2020, President Cyril Ramaphosa placed infrastructure at the heart of the strategy: "Central to the economic recovery strategy will be the measures we will embark upon to stimulate demand and supply through interventions such as a substantial infrastructure build program."

Infrastructure delivery has been identified as key to kickstarting the economy, and state-owned enterprises that deliver infrastructure will play a critical role in transforming the economy to one that is more dynamic, employment creating and equitable.

Conscious of the role SANRAL can play in re-igniting the economy through existing infrastructure projects, as well as "shovel ready" projects in the pipeline, and in collaboration with the Minister of Transport, Mr Fikile Mbalula, we have actively engaged in activities to feed into the development of the Infrastructure Plan, in cooperation with the Investment and Infrastructure Office (IIO) in the Presidency.

Through road infrastructure projects, SANRAL is determined to play a role to the fullest extent in the post-COVID-19 economic recovery, development and social transformation of the country, primarily by maintaining and creating new jobs, especially for the youth, and in creating opportunities for the development and participation of small, medium and large black-owned enterprises in the Agency's work.

SANRAL, among other important role players, carries part of the burden of economic recovery. Through our work, we create jobs, make the economy move and link all parts of the country. If SANRAL does not deliver, there would be some negative social and economic consequences, the effects of which would undermine the government's efforts to put the country back on the path

of recovery. SANRAL is unequivocal about its position and is committed to playing its role in collaboration with other state-owned entities to maintain the economic and social stability of the country.

As the full impact of the COVID-19 pandemic unfolds across the world, governing bodies and management teams of organisations face a host of unanticipated challenges and a good deal of uncertainty. Now, more than ever, those charged with governance need to be proactive, display strong and ethical leadership and ensure that they address the right issues and concerns stemming from the impact of COVID-19 on the operations and outlook of their organisations.

According to the King IV Report on Corporate Governance: *"Corporate governance is the exercise of ethical and effective leadership by the governing body towards the achievement of defined governance outcomes: ethical culture, good performance, effective control, and legitimacy."*

It has therefore been important for the Board of SANRAL to continue maintaining high standards of good governance as a basis for our thoughts, decisions, and actions. We locate this within our country's quest, since the advent of democracy, to create a capable state with strong institutions that are capable of implementing Government's policy and translating its commitments into reality in keeping with the objectives of the National Development Plan. In this regard, SANRAL is regularly cited as an example of a state-owned enterprise committed to service delivery, good governance and operational and financial efficiency.

Guided by SANRAL's long-term corporate strategy, Horizon 2030, our governing body embraces this notion and seeks to continue and improve on this track record. It is our stated intention to lead the Agency to a clean audit for FY 2020/21 having received a record 16th successive unqualified audit report in the period under review.

We believe that this unqualified audit and the clean audits expected in the future hinge on a clear separation of roles between the Board and Management, with the Board as the custodian of the organisation's strategy and oversight and Management as the implementation arm thereof. The Board sees Management as advisors accountable to the Board for the implementation of the organisation's strategy. The Board, in turn, is accountable to our Executive Authority and, therefore, to the government and the people of the country.

While the Board oversees the governance of the Agency, at the same time it remains acutely attentive to the wellbeing of the individuals who make up SANRAL's workforce. It is the employees who ultimately ensure the excellence in execution and excellence in delivery on SANRAL's mandate, and they are key to the sustainability of the organisation and its capacity to meet future challenges. The Board is conscious that a happy workforce breeds a positive work culture, and we remain committed to ensuring that an environment exists where each employee can function, develop, and reach their full potential.

For this reason we continue to place great emphasis on training and development while at the same time driving the transformation of our workforce and providing opportunities for black skills and talent to meet the demands of the organisation. This includes recruiting and retaining highly skilled staff, ensuring continuous learning as well as sponsoring education and training of civil engineers and relevant professionals.

The Board subscribes to procurement with integrity and in line with the country's laws.

In procuring the services of suppliers, service providers and contractors, the focus on involving local communities and black businesses is a key principle of SANRAL's Transformation Policy. SANRAL has developed a sophisticated model for the identification, development and mentoring of black-owned SMME's, able to participate in and add value to the Agency's construction and maintenance projects. Among others, the Moloto Road project, recently re-prioritised and placed under SANRAL's management from end-to-end, is an example of how this model has been successfully implemented.

In the period under review the construction industry continued to take a beating, and while many well-established construction companies folded, many others saw themselves weakened by the adverse market dynamics. While this dynamic could present a threat to the Agency's ability to find suitable construction partners to execute its projects, it also presents the opportunity for the development of black industrialists to enter this space and become new major actors in construction. As SANRAL we are committed to supporting the development and growth of these new players and providing them with the necessary assistance to enter the sector.

As the focus of the country turns towards massive investment in infrastructure championed by the President, our national road network will continue to be an important catalyst for growth and socio-economic transformation. As SANRAL, we are poised to continue our sterling contribution towards this national priority.

I would like to convey our thanks and appreciation to the Board, the CEO (Mr Skhumbuzo Macozoma), our executives, management and staff for their dedication to qualitatively deliver on the mandate and work of SANRAL. On behalf of the Board I would also like to thank the Minister of Transport, Mr Fikile Mbalula, MP, and his deputy, Ms Dikeledi Magadzi, MP, and thank them for the trajectory they continue pointing us to.

I also extend my gratitude to the Director-General of the Department of Transport, Mr Alec Moemi, for his quality participation on our Board and the support he has given our operational team, after equally qualitative participation and support by Mr Prasanth Mohan, the erstwhile representative of the DoT on our Board.

Without the support of the Department of Transport, the National Treasury, the Auditor-General and Parliament, we cannot achieve our objectives and fulfil our mandate. These structures' invaluable contribution to our success is, therefore, also highly appreciated.

THEMBA MHAMBI
CHAIRPERSON

CHIEF EXECUTIVE OFFICER'S REPORT

Skhumbuzo Macozoma
CEO, SANRAL

Typically, the purpose of an annual integrated report is to review the events of the previous year, the highs and the lows and then to suggest the way forward. But these are not typical times.

As a result of the COVID-19 pandemic, four days before our financial reporting year closed on 31 March, the country went into a three-week lockdown at alert level 5. This was then extended for a further two weeks. The effect on the economy was significant. As this report went to press, restrictions had moved to alert level 1, as the government bravely attempted to strike the necessary balance between saving lives and saving livelihoods.

We have an enormous task ahead of us. SANRAL will play an essential role in the post-pandemic economic recovery of the country. As part of this recovery plan, President Cyril Ramaphosa announced the creation of the Sustainable Infrastructure Development System (SIDS) methodology to guide infrastructure development in the country. It is a massive undertaking. At the time of writing [April 2020], 177 projects had been submitted, covering six sectors, including transport. The total project investment is more than R1.6 trillion.

The projects were selected for being able to promote job creation, broaden municipality revenue flow and resuscitate rural economies. Critically, these infrastructure projects are expected to create 1.6 million employment opportunities.

According to the Department of Public Works and Infrastructure (DPWI) and the Head of Infrastructure and Investment in the Presidency, the majority of the projects will be procured and implemented by the South African National Roads Agency (SANRAL), Transnet and the Water Boards. We have our work cut out for us. Our mandate to preserve, improve and develop the network of national roads critical to our country's growth prospects has never been more significant or more pressing.

That said and without losing sight of Horizon 2030, our long-term strategy, we must recap what has transpired in the last year and look ahead to what awaits us. As we do so, it is important to keep in mind that infrastructure projects are planned and implemented over several years, meaning that SANRAL typically takes a medium- to long-term view of its business.

One of our most important pillars of operation is roads. During the financial year, the total capital expenditure on 47 construction projects on non-toll roads amounted to R2.846bn and operational expenditure to maintain these roads amounted to R2.273bn across 273 projects.

Our four regional offices entered into Routine Road Maintenance (RRM) contracts to the value of R2.588bn. These contracts covered both non-toll and toll roads, excluding those under concession. The international benchmarks emphasise that poor to very poor roads must be below 10%; in SANRAL's case, thanks to RRM contracts being one of the activities implemented, this category constitutes only 6.4% of the network.

During this year, the total capital expenditure on seven construction projects on SANRAL toll roads amounted to R412m and operational expenditure on 60 projects to maintain these roads amounted to R2.179bn. The net profit for the year was R1.107bn. Notwithstanding the improved revenue flow for toll roads and the overall reduction of the cost of operating these roads, this was 58% lower than operating profit earned in 2018/19 (R2.627bn).

An issue which continues to place financial pressure on SANRAL is the continued refusal by some road users to pay the Gauteng Freeway Improvement Project's (GFIP) e-toll fees. The matter is now before Cabinet and we await direction in this regard.

The total expenditure of the three concessionaires—Trans African Concessions Pty Ltd (TRAC), N3 Toll Concession (RF) Pty Ltd (N3TC) and N1N4 Bakwena Platinum Corridor Concessionaire Pty Ltd (Bakwena)—

on capital road improvement projects in 2019/20 amounted to R1.17bn. In respect of toll roads under concession, the responsible companies collectively spent R175m on routine road maintenance during 2019/2020.

Throughout, we continuously sought a balance between contributing to rural development and ensuring the efficient growth of the urban economy.

In 2019/20, the national road system included 10 005 bridges and major culverts (of this figure, 3 830 are bridges), and require inspection by accredited inspectors of the Committee of Transport Officials (COTO) Structures sub-committee every five years. The above figure includes 926 bridges and major culverts on routes managed by concessionaires. For 2019/20 the Bridge Condition Exposure score achieved was 93% of travel over or under which comprised bridges with an Overall Condition Index (OCI) greater than 70%.

SANRAL's role in transforming the South African economy, particularly the construction sector, is a major objective of our overall strategy. In 2017, we adopted a Transformation Policy which sought to ensure inclusive participation of a broad spectrum of suppliers in opportunities that SANRAL makes available to the market. The added value was in growing, developing, empowering and transforming the construction and related industries.

SANRAL has used its procurement processes to implement its Transformation Policy, maximising the participation of black contractors, professionals and suppliers in its commissioned projects. By so doing, we ensured that black individuals and companies other than those of the existing monopolies participated in the supply chain for construction materials, equipment, technologies and systems. Further, we promoted structural development programmes and partnerships to speed up the development, growth and participation of black-owned entities, including small contractors—owned mainly by women and black entrepreneurs—in the industry.

We know that the barriers to entry, including the lack of access to funding and equipment, require intervention in the value chain. SANRAL used empowerment agreements with entities at the apex of supply chains for construction materials, equipment and other supplies to level the playing field and ensure emerging entities were able to secure and supply materials and equipment for commissioned projects. We also developed a sliding-scale model to assist small enterprises in developing and progressing from sub-contracting to tendering for more complex projects.

SANRAL provided work on road construction, rehabilitation and maintenance projects to 1 933 SMMEs during 2019/20 and the total amount earned through these contracts was R2.996bn. Black-owned SMMEs derived the most significant benefit, accounting for 73.6% of contracts awarded and 80.2% of the value of work performed.

Road safety is a pillar of operations and SANRAL's activities have been directed to implementing policies and optimising intervention measures by increased outputs on programmes such as the Road Safety Audit on vehicular and pedestrian hazardous locations. In addition, SANRAL has developed and tested an Integrated Transportation Information System (ITIS) application to improve crash reporting, which will inform engineering interventions as well as engineering policy, manuals and guideline documents.

We believe in research and development to aid our advancement and have developed a variety of research topics to gain a better understanding of our road safety landscape, which will be taken forward once the research panel is appointed.

Our mandate on road safety extends beyond the design and construction of safer roads. Horizon 2030 stresses road safety as a national priority and secures SANRAL's role in road safety education and awareness. Through our road safety education and awareness educational programmes we endeavour to change attitudes and behaviour among all road users. During the year, 124 workshops were hosted. A total of 1 963 teachers attended train-the-trainer workshops, while 6 428 received resources to provide road safety education. In addition 238 594 learners and 554 parents benefited from these road safety educational sessions.

Mobility is another important pillar of operations and SANRAL continues to invest in and develop innovative technological projects to assist with our pursuit of a safely engineered road network for all. The Freeway Management System (FMS), operated by Traffic Management Centres (TMC) on a 24-hour, 365-day basis, manages incidents from the time of detection to the reinstatement of free-flow traffic. It plays a vital part in our programme and is a direct connection with our stakeholders by providing real-time traffic information

via the traffic website and the various Twitter handles, helping road users plan their journey.

We are incredibly proud of the Technical Innovation Hub (TIH), based in the Western Region. The Innovation Hub, with a dedicated staff, takes a holistic approach to the research and development of the transportation system for the future. The role of the Innovation Hub, as approved by the EXCO–R&D procedures manual, includes facilitating the development of human resources through training programmes and the Technical Excellence Academy and providing support to the Innovation Programme of SANRAL through assistance with needs determination and impact assessments.

Technology is becoming even more crucial in designing, building and operating a first-class road system. The technologies associated with the Fourth Industrial Revolution, cyber-physical systems and the Internet of Things, for example, will profoundly impact the transport sector in the future.

The use of data analytics on our engineering projects and how our stakeholders are adopting our services is driving behaviour which is informing our priorities and technology road maps. It helps to accelerate service delivery, business efficiency and innovation.

SANRAL's Mobility Account is a prime example of the improved use of technology. Interoperable fare-collection systems are emerging globally as critical enablers of multimodal, integrated travel. Integrated travel is a vital success factor for sustainable public transport systems.

Also, the data from the Mobility Account could form part of a public transport repository, sharing data from participating operators through a central data warehouse to provide valuable information for the planning of integrated public transport systems. Currently, there is no such central repository of public transport information.

SANRAL also took part in the Smarter Mobility Africa and Electric Vehicle Road Trip hosted by the Department of Transport (DoT) in a unique partnership with Generation.e, aimed at bringing stakeholders together to showcase and inspire incremental investment in and transition to smarter mobility.

Our participation reinforced our commitment to South

Africa's Green Transport Strategy: 2018 – 2050 (GTS) and our corporate strategy, Horizon 2030. The transport sector, unfortunately, is the second-biggest emitter of greenhouse gas emissions in South Africa (after energy), contributing significantly to climate change and other environmental impacts. GTS aims to mitigate the effects of the transport sector, address current and future transport demands, employ sustainable development principles and ensure a just transition to a low-carbon and green economy. Reports indicate that electrifying transport in urban areas could move the "business-as-usual" climate scenario closer to the requirements expected from the Paris Agreement.

Alongside this environmental initiative and in partnership with the DoT and stakeholders represented on the Sustainable Roads Forum, SANRAL developed the first draft of an industry-wide South African sustainable roads rating system commonly referred to as the "SuRF" tool. Unlike similar tools in use, SuRF includes a unique focus on the issues of the socio-economic impacts of road projects in the context of South Africa.

We made significant inroads in our community activities by establishing meaningful, constructive engagements and working relationships with key stakeholders, another salient business pillar of SANRAL. The list of stakeholder engagements is extensive, but some of the highlights are worth mentioning. SANRAL made significant progress in its engagements with the Kingdom of Amampondo and Traditional Leaders at Msikaba North and Ingquza Hill Local Municipality.

In the Western Region, collaboration with the DoT's non-motorised transport campaign "Shova Kalula", captured the attention of stakeholders, making it easier to launch a successful "Taking SANRAL to De Aar" engagement.

In the Northern Region, Mpumalanga province, our Transformation Policy of empowering grade one- and two-level SMME companies, was commended and triggered a warm reception by stakeholders.

In Gauteng, stakeholder engagement also focused on SMMEs and their access to opportunity within the SANRAL RRM projects and a critical bottleneck—the reopening of the N3 Germiston project after closure by the Business Forum—was resolved.

In the North West, enhanced alignment among key government stakeholders and SMMEs affirmed cooperation and support for the platforms that facilitated their access to information around SANRAL projects and its Transformation Policy.

SANRAL's success in managing issues of discontent

within communities through multiple engagement platforms and its relationship-building efforts in politically complex environments proved critical in creating a conducive climate for SANRAL operations in the 2019/20 financial year.

All the "Taking SANRAL to the People" campaigns were well attended and focused on the Transformation Policy, its execution and localisation.

SANRAL has endowed three specialised chairs at three of the country's universities, namely the SANRAL Chair in Transport Planning at the University of Cape Town, the SANRAL Chair in Pavement Engineering at Stellenbosch University and the SANRAL Chair in Mathematics, Natural Science and Technology Education at the University of the Free State.

The focus on skills development is integral to SANRAL's mission to expand and support institutions of higher learning. SANRAL intends to expand this support, especially to previously disadvantaged universities and the TVET colleges.

SANRAL's partnerships with the universities centres on a shared interest in increasing relevant research and post-graduate study in engineering and related fields. We are promoting science and mathematics at school level to ensure a secure flow of talented young people into the engineering professions. The partnerships increase the public visibility of SANRAL, help the Agency meet its demand for engineering professionals and relevant research and contribute to a dynamic engineering sector.

We continue to expand the focus of the Technical Excellence Academy (TEA) to benefit graduates within and outside of SANRAL. Our commitment is to develop professionals for the country and support neighbouring countries. It is SANRAL's intention to produce more than 100 professionals in five years and to diversify the professions supported from engineering only to include other built environment professions such as finance, ICT, audit and other professions that make road network management possible.

The TEA enables engineering graduates to fulfil the much-needed practical experience required for professional registration with the Engineering Council of South Africa. The TEA is an exciting way to enter the Agency, offering a range of work exposure opportunities and access to essential tools—from specialised software to laboratory facilities—to fast-track the exposure civil engineers require for professional registration.

During 2019, the TEA housed 35 candidate engineers who had already completed the design and laboratory training phases, ten who had completed the design and site supervision phases and five who completed the design, site supervision and laboratory training phases.

SANRAL is committed to expanding its talent pool and does so by pursuing a more inclusive and attractive scholarship programme. This year, we piloted a new dispensation on learner funding, targeting learners from disadvantaged areas to provide them with opportunities at a privileged school. We targeted five learners from the rural area of KwaMbonambi in grades 11 and 12 and placed them in a school where resources to empower and hone their capabilities are available.

Of course, it will require close monitoring to establish the dynamics and viability of such an initiative. It is encouraging however, that two of the grade 12 learners from this cohort progressed exceptionally well and passed their Grade 12 examinations at the end of 2019. One scholar obtained above 70% for mathematics and physical science, gaining acceptance at the University of Pretoria to study mechanical engineering in 2020.

SANRAL's external bursary programme has done well. In the 2019/2020 financial year, 138 students were sponsored across seven different tertiary institutions in South Africa, with a total committed external bursary expenditure of R16.4m. The sponsored students comprised postgraduate and undergraduate students in studies ranging between B Eng, B Sc, B Eng Tech, B Tech, M Eng and postgraduate diplomas.

One of our goals is to increase the number of candidates that meet the target as set out in SANRAL's Employment Equity Plan. We aimed to support a group of students reflective of the South African demographic and ultimately influence and transform the industry to become more representative of the South African population.

SANRAL is in the advanced stage in the process of reviewing its operating model to ensure it is better geared to deliver Horizon 2030. The implementation of the new operating model will begin as soon as consultations are concluded and approval is obtained from the Board.

The role of the national roads Agency is significant,

especially in light of its broader economic and developmental contribution. The achievements of SANRAL are tangible and the employees take pride in their work. But our work is often complex and demanding and, with this in mind, I extend my sincere appreciation to everyone concerned.

We are grateful to the Minister of Transport, Mr Fikile Mbalula, MP, and his deputy, Ms Dikeledi Magadzi, MP, for their insight and support during the reporting period.

I am thankful to the Chairperson and members of the board and its committees for the time and attention they devote to the Agency. In periods of change, collective wisdom plays an unusually prominent role.

Finally, to our managers and staff members who are ultimately custodians of the Agency's reputation and track record of performance: thank you for yet another year of service with integrity. During this COVID-19 pandemic, our primary concern was your health and safety. Thanks to our structured and capacitated response team, plans and processes were quickly in place to ensure this. We also provided personal protection equipment and other support and we are grateful for your discipline and hard work in difficult circumstances. These measures also ensured that our road users were safe from infection.

SKHUMBUZO MACOZOMA
CHIEF EXECUTIVE OFFICER

SECTION 1

COMPANY OVERVIEW

VISION

Ensuring our national road transport system delivers a better South Africa for all

MISSION

Our purpose is to deliver a safe, efficient, reliable and resilient national road transport system for the benefit of all the people of South Africa

PRINCIPAL TASKS AND OBJECTIVES

Plan, design, construct, operate, maintain and rehabilitate South Africa's national roads

Generate revenue from the development and management of assets

Undertake research and development to advance knowledge in the design and construction of roads and related fields

Advise the Minister of Transport on matters relating to South Africa's roads

BUSINESS AND STRATEGY

SANRAL's long-term strategy, Horizon 2030, defines four business pillars which serve to integrate its operations. These are:

SANRAL 4 BUSINESS PILLARS

01 ROADS PILLAR

This consolidates all functions about the financing, planning, development, improvement and maintenance of national roads. This area of business includes the management of toll roads and the road engineering and maintenance aspects of road safety. There is an emphasis on road solutions that embrace innovative technology.

02 ROAD SAFETY PILLAR

This embraces a holistic approach to road safety, including research and data collection on collisions, public awareness and road safety education, improved road incident management systems, development of engineering standards for safe roads and strengthening of partnerships for law enforcement.

03 STAKEHOLDER PILLAR

This pillar focuses on communication activities to build partnerships, manage community expectations of major road projects and influence public opinion about SANRAL. The pillar lays the foundation for economic participation of small businesses and rural communities in construction projects.

04 MOBILITY PILLAR

The focal point is on road infrastructure to enable public transport and intermodal transport solutions, increase access to strategic locations, integrate regions and facilitate seamless cross-border movement and enhance urban planning.

The four pillars serve to integrate activities across the Agency and deliver different forms of value.

HORIZON 2030

IMPLEMENTATION OF HORIZON 2030

Horizon 2030 guided SANRAL's strategy during the period covered by this report.

The Strategy Implementation Monitoring Committee (SIMC) continued to review progress and report to the Executive Committee and the Board. The five-year Information and Communication Technology (ICT) strategy finalised in 2018/19 is in place and moving forward.

- **The Business Development Unit,** set up to drive the generation of revenue for the Agency.
- **The Central Toll Division,** the groundwork to establish this division has been completed.
- The Agency continued to accelerate the development of professional capacity for road construction in South Africa and the wider African region through its **Technical Excellence Academy.**
- SANRAL continued to explore international business opportunities through its **Africa and Beyond initiative.**
- **The Value Added Services** (VAS) to reposition the Transaction Clearing House.

LOOKING AHEAD: EXECUTION OF HORIZON 2030

Prioritised initiatives and next steps

- **Roll out of the approved Community Development Strategy**—ramp-up community development projects and enhanced approach.
- **Roll out of approved Business Development Strategy**—generate revenue and maximise SANRAL assets.
- **Road safety interventions** through technology and education.
- **Public transport enablement** for the national road network.
- **Implement major projects** that are drivers of regional or the national economy and will have a substantial impact on communities.
- **Streamline toll functions** through the Central Toll Division.
- **Advance transformation** through inclusive participation.
- **Continue stakeholder engagement** to prepare communities before projects are implemented.
- **Build strong partnerships in Africa** and beyond for the provision of commercial services.

Horizon 2030 at work

- **Business Development Unit**
  - Interim unit established
  - Purpose: revenue generation.
- **Central Toll Division**
  - Concept finalised.
- **Integrated Funding Model**
  - Commercial revenue opportunities in progress.
- **Commercial Advisory Services**
  - Projects underway.
- **Technical Excellence Academy and Technical Innovation Hub**
  - Ramp-up initiated.

INTEGRATION OF VALUE THROUGH FOUR BUSINESS PILLARS

01 ROADS PILLAR	02 ROAD SAFETY PILLAR	03 STAKEHOLDER PILLAR	04 MOBILITY PILLAR
MANUFACTURED CAPITAL			
Plan, develop, manage and maintain the national road system, extending over 22 207km and valued at R400bn	• Design and build safe roads • Upgrade roads for enhanced safety • Maintain roads in safe condition	Consult communities on proposed road projects affecting them	Develop road infrastructure to enable public and intermodal transport, optimise mobility and reduce urban congestion
FINANCIAL CAPITAL			
• Finance maintenance and development of national roads • Manage Treasury grant to SANRAL • Mobilise capital for toll road projects • Manage national toll roads and toll road concessions	Invest in evidence-based road safety campaigns	• Account to the public for use of tax monies • Consult with the public on declaration of new toll roads • Utilise spending power to advance equity	Form funding partnerships for joint road construction projects
INTELLECTUAL CAPITAL			
Commission innovative road design, construction and management	Apply international best practice in promoting road safety		Sponsor academic activity in transport planning

01 ROADS PILLAR	02 ROAD SAFETY PILLAR	03 STAKEHOLDER PILLAR	04 MOBILITY PILLAR
HUMAN CAPITAL			
• Recruit and retain highly skilled staff and ensure continuous learning • Develop SMMEs and construction skills pool through road contracts • Sponsor education and training of civil engineers and relevant professionals	Develop skills for conducting road safety education	Facilitate participation of local companies and work seekers in road construction projects	Invest in mobility research and training of transportation professionals
SOCIAL AND RELATIONSHIP CAPITAL			
• Utilise contracts to promote social equity and economic transformation • Engage local companies and work seekers on road projects • Undertake community development projects to improve local mobility and safety	• Develop road incident management systems • Participate in national road safety initiatives • Collaborate with relevant role players	Use a variety of media and communication platforms to present and discuss SANRAL's work	
NATURAL CAPITAL			
• Undertake environmental impact studies • Implement environmental off-set requirements • Promote the use of less resource-intensive road building methods	Maintain roads to minimise incidents involving wildlife	• Consult parties representing environmental interests when planning roads • Form partnerships to manage environmental and other activities	Support development of transport options with lower carbon footprint

BOARD OF DIRECTORS | NON-EXECUTIVE DIRECTORS

THEMBA MHAMBI
Chairperson

Senior Secondary Teachers' Certificate (English, History, Guidance)

BA (English, Education, History)

BA (Honours) English

MA (English, Creative Writing concentration)

ROB HASWELL

BA

BA (Honours) Geography

MSc (Geography)

AVRIL HALSTEAD

BCom (Honours) Mathematics

MBA

MA (Advanced Organisational Consulting)

MSc (Economic Policy)

LUNGILE MADLALA

N Dip (Civil Engineering)

B Tech (Civil Engineering)

BSc (Honours) Applied Science

(Hons) Civil Engineering, Transportation Engineering

THAMSANQA PIET MATOSA

Executive Leadership Development Programme – Municipal Manager's Certificate

PRASANTH MOHAN

B Tech (Civil Eng)

Management Development Programme: Project Management

Advanced Professional Management Programme

Postgraduate Certificate in Executive Leadership

EXECUTIVE DIRECTOR | COMPANY SECRETARY

SKHUMBUZO MACOZOMA
Chief Executive Officer

BSc (Civ Eng)
MSc (Civ Eng)

ALICE MATHEW
Company Secretary

BSc
MBA
FCIS

EXECUTIVE MANAGEMENT

LOUW KANNEMEYER
Engineering Executive

BEng (Civ)
MEng (Transportation) Cum Laude
Pr Eng
Pr CPM

INGE MULDER
Chief Financial Officer

B Compt (Honours)
CTA
CA (SA)

ADOLPH TOMES
Acting Business Operations Executive

Diploma (IT)
MBA

REGIONAL MANAGEMENT

EASTERN REGION

DUMISANI NKABINDE

BSc (Civ Eng)
Pr Eng
Diploma Project Management
MBA
MSAICE

SOUTHERN REGION

MBULELO SIMON PETERSON

BSc (Maths and Applied Maths)
BSc (Civ Eng)
MSc (Strategic Planning)
MBA
Pr Eng
MSAICE

WESTERN REGION

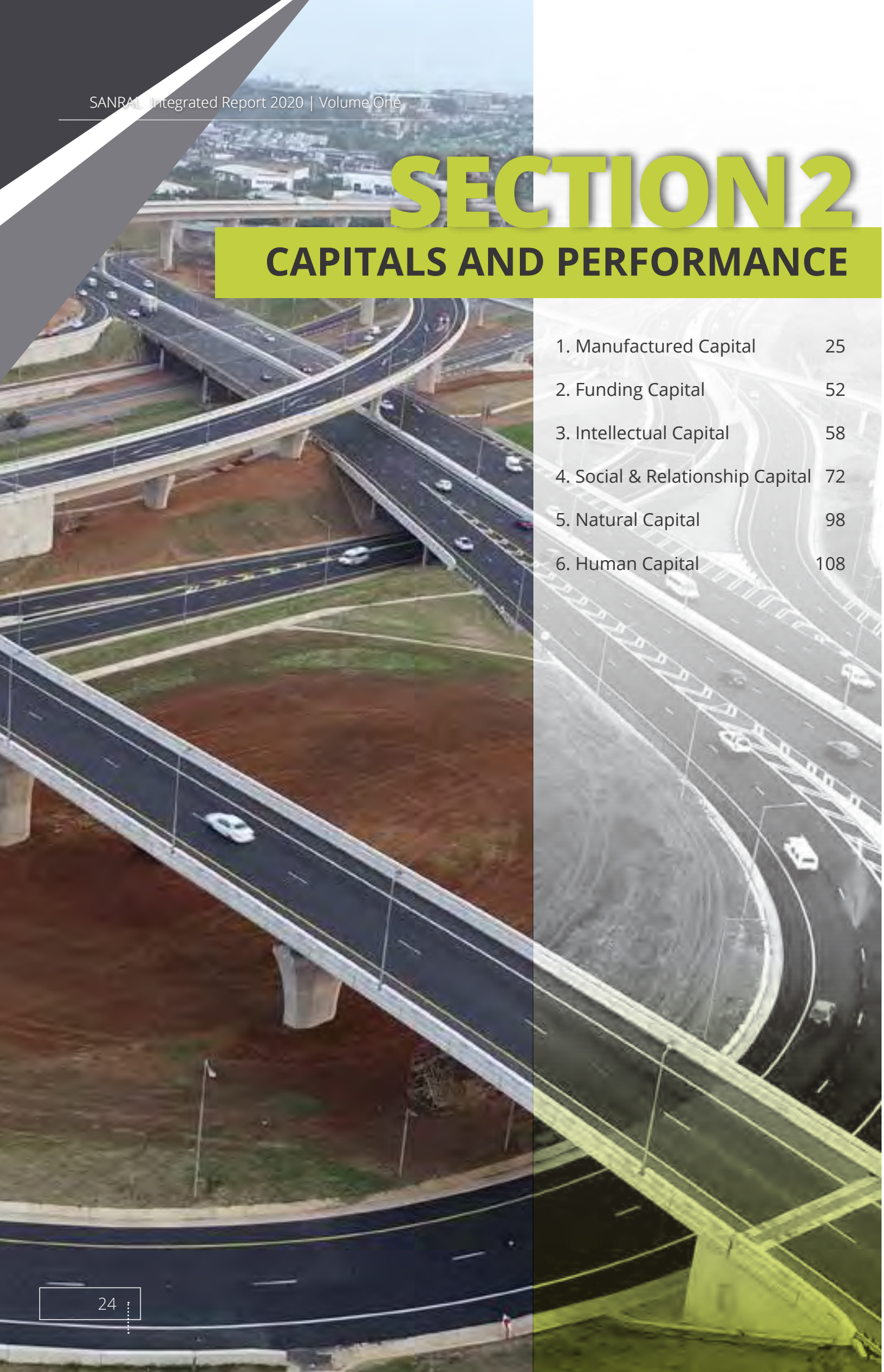
RANDALL CABLE

BSc (Civ Eng)
MEng (Civ)
Pr Eng

NORTHERN REGION

PROGRESS HLAHLA

BSc (Honours) Civil Eng
MSc (Civil)
Adv Diploma Mgt
Pr Eng
MBA candidate



SECTION 2

CAPITALS AND PERFORMANCE

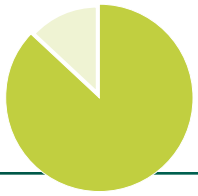
1. MANUFACTURED CAPITAL

SANRAL is responsible for the development, improvement, maintenance and management of the national road network, which currently comprises 22 207km and, with a notional value of R400bn, is considered one of South Africa's largest infrastructural asset.

The economic significance of the national road network is based on the fact that:

- Road freight constitutes about three-quarters of South Africa's total load.
- National roads carry more than 70% of all cargo.

The national road network is continuously growing, as provincial roads are incorporated and new sections are developed to increase the efficiency and safety of traffic movement.



87% Non-toll roads funded by Treasury

13% Toll roads managed by SANRAL and private concessions

Roughly 87% of roads in the system are non-toll roads, funded by a grant from Treasury and the remaining 13% comprises toll roads, almost half of which are managed directly by SANRAL and half by private companies granted concessions for the construction and management of these roads.

Constant maintenance is critical to preserving the lifespan of roads and maximising the return on capital investment. Road maintenance is supported by active road management which involves regular inspection of roads, bridges and slopes. It also consists of the management and servicing of road users, with activities ranging from overload control to the sophisticated management systems offered on some of the country's busiest urban freeways, where information technology assists in incident response.

NATIONAL TOLL ROADS

Managed by SANRAL

- Sections of N1 in Western Cape, Free State, Gauteng and Limpopo
- R30 near Brandfort, Free State
- Sections of N2 in Eastern Cape and KwaZulu-Natal
- N3 Mariannhill (KwaZulu-Natal)
- N4 just west of Pretoria
- N17 from Gauteng to Ermelo, Mpumalanga
- Gauteng freeway system (N1, N3, N12 and R21)

Toll roads under concession

- **N4** eastward from Pretoria to Maputo (concession holder is Trans African Concessions [TRAC])
- **N3** between Cedara, KwaZulu-Natal and Heidelberg, Gauteng (concession holder is N3 Toll Concession (RF) Pty Ltd [N3TC])
- **N1** between Pretoria and Bela Bela and N4 westward from Pretoria to Botswana border, Skilpadshek (concession holder is Bakwena Platinum Corridor Concessionaire [Bakwena])

1.1 ROAD DEVELOPMENT, IMPROVEMENT AND REHABILITATION

During 2019/20, SANRAL undertook 54 capital projects, on both non-toll and toll roads, to build new roads, improve existing roads and rehabilitate roads in a sub-optimal condition. These projects on non-toll and toll roads directly under the Agency's management involved a total of 151.01km of the road network.

Capital projects and length of road beneficiated 2019/20

Type of Capital Project	Non-Toll Roads		Toll Roads	
	No. of Projects	Km beneficiated	No. of Projects	Km beneficiated
Strengthening	8	46	0	0
Improvement	15	45	1	1.01
New Facilities	24	48	6	11
Total	**47**	**139**	**7**	**12.01**

1.1.1 Major construction and rehabilitation projects in progress 2019/20

SANRAL managed a number of projects and focused on strengthening, restoration, construction of new carriageways and upgrading of new carriageways among others, that were at various levels of completion during the year.

Major projects on non-toll roads

Section of road	Percent complete	Value of work done 2019/20	Scope of work	Main contractor
R511 Section 3 from Road D2720 to Beestekraal	56%	R76.8m	Strengthening and partial reconstruction	NZK FootPrint Engineering CC
R53 Section 2 from Potchefstroom to Ventersdorp	77%	R50.4m	Repair and reseal	Boitshoko Road Surfacing & Civil Works CC
N4 Section 12 between P123-1 and Road 980	95%	R114.4m	Construction of new dual carriageway	Aveng Lubocon Joint Venture
R37 Section 2 in Lydenburg	53%	R37m	Restoration of selected pavement layers and resurfacing	WTW Civils
N11 Section 9 from Hendrina to Hendrina Power Station	97%	R33.3m	Improvement and adding paved shoulders	Power Construction
R81 Section 1 in Ga-Sekgopo	31%	R50.2m	Improvement	Lonerock Construction
R573 Sec 3 km 19.2 to km 43.7 Mathys Zyn Loop to Marble Hall	56%	R0.00	Upgrading to new dual carriageway	KPMM and CBE Joint Venture
N2/3 Caledon*	60%	R140.9m	Improvement including widening and addition of passing lanes	Group5/ceded to H&I
N2/7 Gwaiing Bridge	45%	R24.3m	Construction of new bridge	KPMM
N6, Section 6 between Rouxville and Smithfield	77%	R163.4m Total spent on the project to date: R396.3m	Rehabilitation of the N6 between Rouxville and Smithfield	WBHO Construction (Pty) Ltd
Upgrade of Hammarsdale Interchange	95%	R352m	Upgrade the existing diamond interchange to a semi-parclo (partial clover leaf) free-flow interchange, which includes the construction of a new bridge and six new on- and off-ramps	Stefanutti Stocks Civils KZN (Pty) Ltd
Ethekwini Pedestrian facilities on N2 Section 25 (between km 4.0 and km19.5)	34.5%	R 29.5m	Construction of pedestrian walkways on National N2 Section 25, between km 4.0 and km 19.5.	GnS Civils (Pty) Ltd

Note: the above rand amounts have been rounded up
*time over-run — project was ceded to H&I from Group 5

1.1.2 Major projects completed during 2019/20

Approximately 16 construction projects, throughout the provinces, were completed during the financial year as depicted in the table.

Major Projects completed

Section of road	Value of work done 2019/20	Scope of work	Main contractor
N7/1 Atlantis to Leliefontein	R150.9m	Construction of dual carriageway	Triamic
N7/1&2 Malmesbury	R37m	Construction of dual carriageway	Triamic
N7/1 Abbotsdale	R263.5m	Construction of dual carriageway	Triamic
N7/2 Hopefield	R152m	Construction of dual carriageway	Triamic
R34 Section 2 from Bloemhof to Schweizer-Reneke	R167.8m	Repair and reseal	Quality Plant Hire
R34 Section 1 in Schweizer-Reneke	R321m	Improvement	Edwin Construction
R520 Section 1 in Vaalwater	R31.6m	Reseal	Actophambili
R40 Section 7 from Mica to Phalaborwa	R7m	Strengthening and resurfacing	Quality Plant Hire and Expectra 388 Joint Venture
R505 Section 4 from Wolmaransstad to N14	R60m	Upgrade and resurfacing	Power Construction
NRA R.518-020-2016/1 Section 1: Marken	R47m	The resurfacing of the national route R518, from Marken (km 0) to Bakenberg (km 32)	Quality Plant Hire and Expectra 388 Joint Venture
R.518-020-2016/2 Section 2: Mapeta	R36.9m	The resurfacing of the national route R518 from Sterkriver (km 64.8) to Mapeta (km 97.5)	Quality Plant Hire and Expectra 388 Joint Venture
R510 Section 1 from Rustenburg to NW/Limpopo Border	R1.1m	Pavement, restoration and reseal	Roadmac (Raubex)
N.005-040-2017/1	R18m	Construction of a traffic control centre involving new monitoring office, road, electrical and mechanical works.	Ruwacon (Pty) Ltd
N1 section 17 between Holfontein Interchange and Kroonstad	R46.8m	Upgrade of the existing 2-lane single carriageway road to a 4-lane divided dual carriageway freeway	Hillary Construction
N1 Section 17 Ventersburg to Holfontein	R61.2m	Upgrade of the existing 2-lane single carriageway road to a 4-lane divided dual carriageway freeway	Aveng Grinaker-LTA
N2 section 28 and 29 between Mtunzini and Empangeni	R169.3m	Upgrade of the N2 from a single carriageway to a 4-lane dual carriageway freeway.	Concor Infrastructure

Note: the above rand amounts have been rounded up

1.1.3 Major projects on toll roads managed by SANRAL

Four major projects were completed on SANRAL managed toll roads during the year, while three other projects were at various stages of completion.

Major Projects on SANRAL managed toll roads

Section of road	Percent complete	Value of work done 2019/20	Scope of work	Main contractor
N1 Section 29 Musina Ring Road	49%	R54.6m	Construction of 8km of new (greenfields) single-carriageway freeway	Basil Read, contract ceded to Raubex in the last quarter of 2019
N1 Section 21 in Erasmusrand	100%	R10.2m	Construction of Pedestrian Bridge at Erasmusrand	Teichman/Ndungane Joint Venture
N1 Section 27 Polokwane Ring Road	40%	R61.9m	Improvement and upgrading of Polokwane Ring Road	Basil Read, contract ceded to Edwin Construction in October 2019
The realignment of National Route 2, Section 27 at Umhlali River Bridge (km 15.370 to km 15.980) and at Umvoti River Bridge (km 26.400 to km 27.140)	3.93%	R2.5m	Reconstruction of two short sections of the northbound and southbound carriageways of the N2 freeway on the north sides of the Umhlali and Umvoti River Bridges	Raubex KZN (Pty) Ltd
N1 section 17 between Holfontein Interchange and Kroonstad	100%	R46.8m	Upgrade of the existing 2-lane single carriageway road to a 4-lane divided dual carriageway freeway	Hillary Construction
N1 Section 17 Ventersburg to Holfontein	100%	R61.2m	Upgrade of the existing 2-lane single carriageway road to a 4-lane divided dual carriageway freeway	Aveng Grinaker-LTA
N2 section 28 and 29 between Mtunzini and Empangeni	100%	R169.3m	Upgrade of the N2 from a single carriageway to a 4-lane dual carriageway freeway.	Concor Infrastructure

Note: the above rand amounts have been rounded up

1.1.4 Toll road projects managed by concessionaires

SANRAL continues to monitor the quality and adequacy of roads managed by its concessionaires, similarly to those roads managed by SANRAL. Concessionaires continue with capital projects to strengthen and improve the roads that fall within their responsibility. The total value of eight construction and rehabilitation projects performed during 2019/20 on toll routes managed by concessionaires was R1.17bn. In addition to these projects, TRAC is acting as the implementing agent for SANRAL for the Karino Interchange construction.

Major projects on toll roads managed by concessionaires | N3TC

Section of road	Percent complete	Value of work done 2019/20	Scope of work	Main contractor
Cedara to Mooi River	77%	R319m	Rehabilitation and overlay of N3 Cedara to Mooi River	Roadmac Surfacing
Van Reenen's Pass	67%	R193m	Rehabilitation and overlay of N3 Van Reenen's Pass	Roadmac Surfacing
RR-2018-002A	18%	R180m	Rehabilitation and overlay of N3 Warden to R34	Roadmac Surfacing
RR-2018-002B	17%	R79m	Rehabilitation and overlay of N3 R34 to Villiers	Hillary Construction

Note: the above rand amounts have been rounded up

Major projects on toll roads managed by concessionaires | TRAC

Section of road	Percent complete	Value of work done 2019/20	Scope of work	Main contractor
N4 between Belfast and Machadodorp, MP	25%	R100m	Upgrading: lane additions	WBHO/Motheo JV
N4 Upgrading of Karino Interchange	25%	R80m	New grade separated interchange	Raubex Construction

Note: the above rand amounts have been rounded up

Bakwena
N1N4 toll

Major projects on toll roads managed by concessionaires | BAKWENA

Section of road	Percent complete	Value of work done 2019/20	Scope of work	Main contractor
N4-9 and N4-10	55%	R217m	Dualling of N4 carriageway District Brits	Raubex
N4-10 P35 South Eastern off ramp	20%	R8m	South Western off-ramp on R511	Raubex

Note: the above rand amounts have been rounded up

Completed construction and rehabilitation projects on toll routes under concessionaires

Project	Value of contract	Scope of work	Main contractor
N4 Schoemanskloof from Cross roads, Machadodorp, to Mashishing/R36 intersection	R85m	Rehabilitation and strengthening	Tau Pele Construction
N4 Montrose to Schagen	R115m	Rehabilitation and strengthening	Tau Pele Construction
N4- Sector 4a Phase 2	R252m	Widening and layerworks upgrade N4 district Swartruggens – Zeerust	G4 Civils

Note: the above rand amounts have been rounded up

1.2 ROAD NETWORK MANAGEMENT AND MAINTENANCE

The data gathered by constant surveillance of the network using automated systems and human observation determines the allocation of the maintenance budget. This data enables SANRAL to meet internationally recognised standards for pavement quality. As indicated below, a very high percentage of the national road network complies with international benchmarks.

Road roughness	Rut depth	Macro-texture
95.89%	98.78%	98.78%

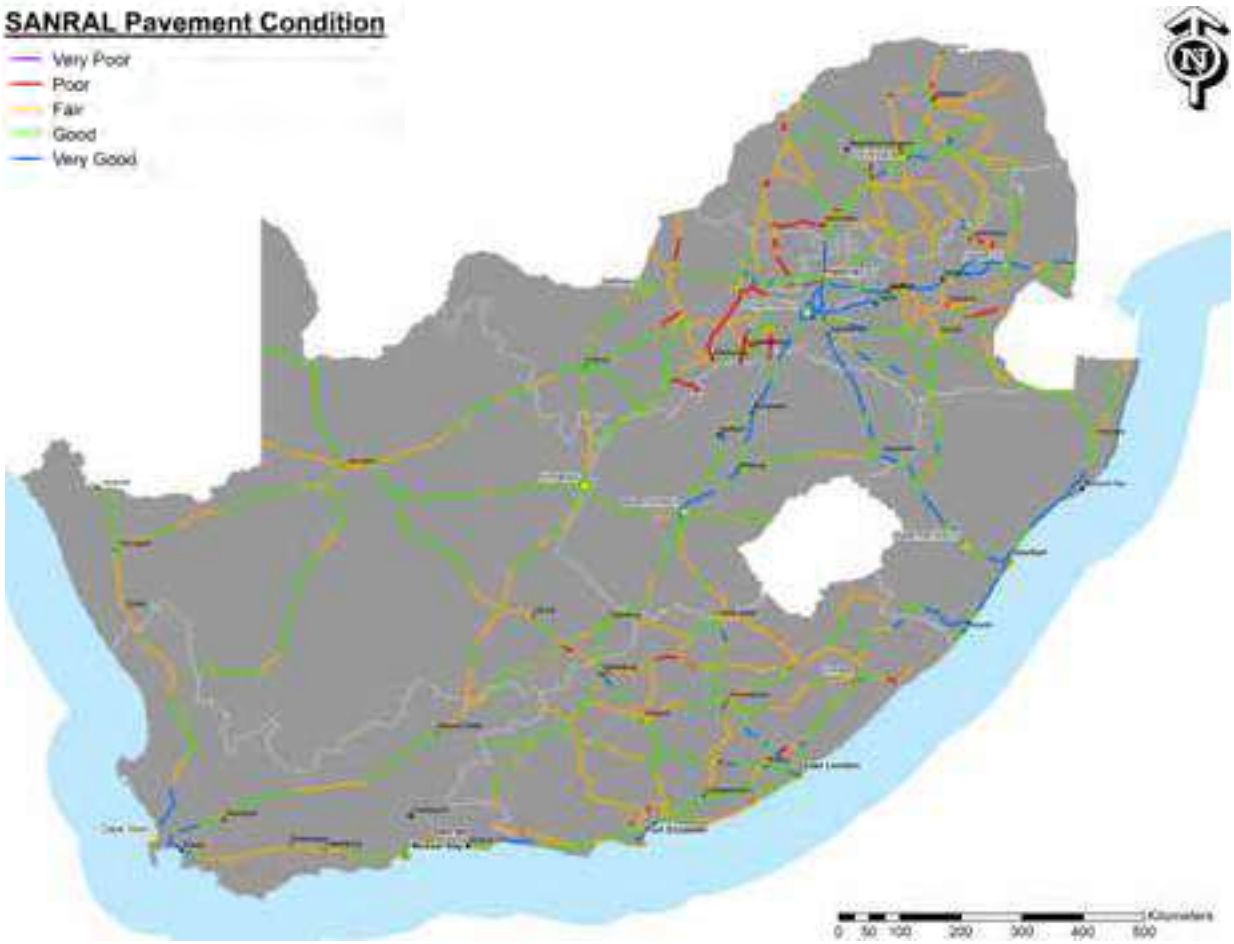
Percent of travel on SANRAL roads meeting international standards in 2019/20

1.2.1 Pavement Condition

In 2019/20, the pavement condition of about 58.4% of national roads was in good to very good condition and about 35.2% in fair condition. Just 6.4% was rated poor to very poor. There have been small fluctuations in pavement condition over the last three years. Compared to 2018/19, the pavement condition in 2019/20 shows a slight downward drift, with marginally lower percentages in the good and very good categories and a small increase in fair ratings. However, the differences are so small that they could be normal fluctuations and do not necessarily indicate deterioration.

Comparison of pavement conditions of national roads for three years starting 2017/18

Road Condition	2017/18	2018/19	2019/20
Very Good	15.0%	14.8%	14.5%
Good	46.7%	44.9%	43.9%
Fair	34.8%	36.2%	35.2%
Poor	3.4%	4.0%	6.1%
Very Poor	0.1%	0.1%	0.3%



1.2.2 Bridge Management

In 2019/20, the national road system included 10 005 bridges and major culverts (of this figure, 3 830 are bridges), and require inspection by accredited inspectors of the Committee of Transport Officials (COTO) Structures sub-committee every five years. The above figure includes 926 bridges and major culverts on routes managed by concessionaires. For 2019/20 the Bridge Condition Exposure score achieved was 93% of travel over or under which comprised bridges with an Overall Condition Index (OCI) greater than 70%.

Bridge condition exposure (BCE) measurements

Description	2016/17 Actual	2017/18 Actual	2018/19 Actual	2019/20 Actual
Percentage of travel over or under bridges on national roads with OCI higher than 70%*	94	93	93	93

*The OCI threshold for structures in good condition or better is 70%

1.2.3 Slope Management

SANRAL undertakes proactive management of unstable slopes in all regions.

In the Southern Region, 106 slopes were assessed and 90% were in a fair and good condition.

In the Western Region, 945 slopes were assessed and 98% were in a fair and good condition. There were no serious slope-related incidents in the region during the financial year 2019/20.

In the Eastern Region, no slope assessment was undertaken during the period under review. The region is awaiting the completion of the TMH 21 Manual for Slope Assessment, which will act as a guideline in formulation of the scope and methodology for undertaking the visual assessment of road slopes. The region will undertake an assessment once the manual is completed.

In the Northern Region, no slopes were investigated in the year under review due to a delay in the geotechnical proforma. The most dominate geotechnical hazard is the sinkholes and minor related subsidents, however, 85% of slopes were in good condition with an estimated 15% in fair to poor condition.

Sinkhole-related incidents in the Northern Region

Location of incident	Nature of problem	Stabilisation work done	Project estimate
R501/ Carletonville (Gauteng Province)	Mine related incident—road reserve and outside	Peer reviewed by Geotechnical Hub	Immediate holding action and storm water management. Cost estimated at less than R10m
N14 Klerkskraal (North West Province)	Minor incident fence/road reserve	Possible RRM contractor/ training	Estimated at less than R2m

1.2.4 Contracts for routine road maintenance

On-going routine road maintenance (RRM), periodic maintenance, strengthening and improvements are essential activities in the upkeep of our road systems. RRM activities include cleaning drains and culverts, vegetation control, line marking, guard rail repair, road sign repair and road patching.

In 2019/20 SANRAL's four regional offices entered into RRM contracts to the value of R2 588 370 027. These contracts covered both non-toll and toll roads, excluding those under the concessionaires.

Value of routine road maintenance contracts for all regions 2019/20

Road area	Contract value
Northern Region Gauteng, Mpumalanga, Limpopo and North West	R1 163bn
Eastern Region Free State and KwaZulu-Natal	R432.1m
Southern Region Eastern Cape	R557.5m
Western Region Northern Cape and Western Cape	R435.8m
Total for SANRAL-managed roads	**R2 588bn**

Note: the above rand amounts have been rounded up

In respect to toll roads under concession, the responsible companies collectively spent R175m on RRM contracts in 2019/2020 with 13 contracts being awarded to women-owned companies and 23 to youth-owned companies.

RRM contracts awarded per concessionaire

Concessionaire	Road Maintenance
Bakwena	R72m
TRAC	R59m
N3TC	R44m
Total	**R175m**

Note: the above rand amounts have been rounded up

Number of RRM contracts awarded to women- or youth-owned

Concessionaire	Women-owned	Youth-owned
N3TC	5	15
Bakwena	2	4
TRAC	6	4
Total	**13**	**23**

Note: the above rand amounts have been rounded up

1.2.5 Smart Road Systems

Technology is an integral part of the management systems of our freeways. It links a network of closed-circuit television (CCTV) cameras and vehicle detector stations to 24-hour traffic management centres providing rapid emergency responses to incidents and helping to prevent traffic congestion for commuters. Freeway management systems allow for sophisticated traffic analysis and incident data to identify high-risk areas and plan accordingly.

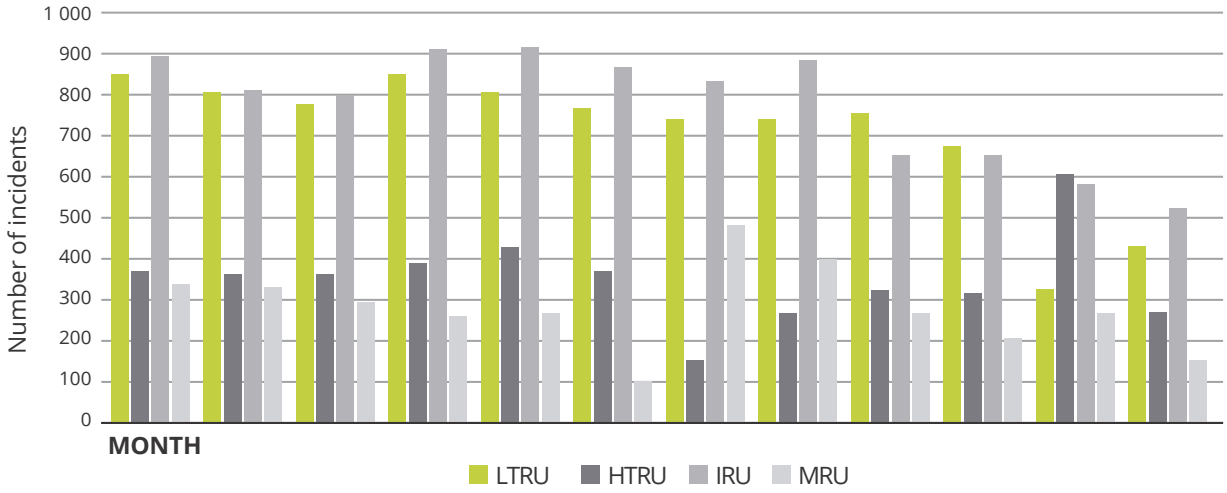
On-Road Services

The Gauteng Freeway Management System (FMS) is funded through the Open Road Tolling (ORT) project. This unique funding mechanism enables us to provide additional features to ensure the safety of the road user. One such feature was the implementation of the On-Road Services (ORS) in Gauteng. The ORS, operating from the Traffic Management Centre (TMC), complements the existing traffic police and emergency services.

The ORS team has strict Key Performance Indicators (KPI) relating to the timeframes required within which to respond to an incident. During peak periods, they are located at strategic high-incident "hotspot" locations. These locations are determined using the data collected and analysed by the TMC. ORS's fleet of 34 vehicles comprises the Incident Response Units (IRU), Medical Response Units (MRU), Light Towing Response Units (LTRU) and the Heavy Vehicle Towing Response Units (HTRU). These units, on average, respond to 55% – 60% of the total incidents in Gauteng each month.

Below are the figures of before and after scenarios which we conducted to measure the effectiveness of the ORS.

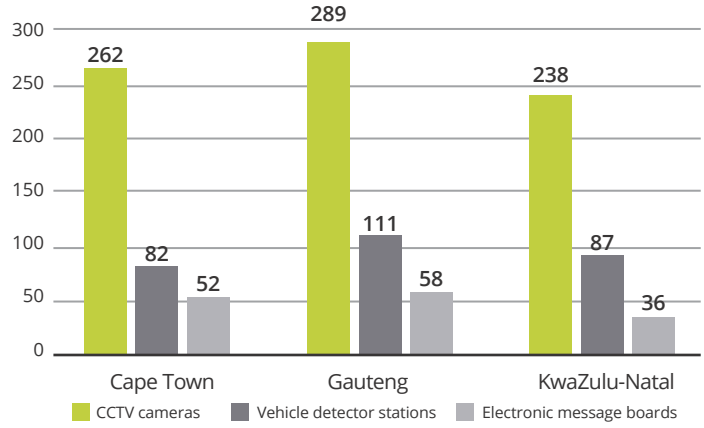
ORS response per month



FREEWAY MANAGEMENT SYSTEM

The Freeway Management System (FMS) and its devices are operated by Traffic Management Centres (TMC) on a 24-hour, 365-day basis. The primary aim of the TMC is to manage incidents from the time of detection to the reinstatement of free-flow traffic. All incidents captured by the system are stored indefinitely. The video footage is valuable data for criminal investigations and the TMC provides it to law enforcement to assist with their investigations. Pedestrian incidents—especially walking on or across freeways—are recorded as an incident as road users are forced to slow down and exercise caution on the freeway.

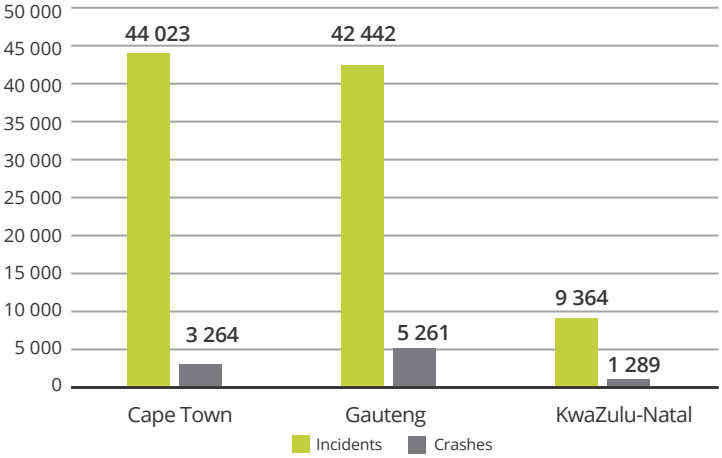
Freeway Management System infrastructure 2019/20



The average incident detection time in 2019/20 was

Cape Town	2 minutes 52 seconds
Gauteng	3 minutes 21 seconds
KwaZulu-Natal	2 minutes 24 seconds

Overall incident and crashes statistics



THE FMS IS COMBATTING CRIME AND SAVING LIVES

Hijacking Incident

Event Number: 189241
Date: 16 June 2019

Location 1:
N3 North before
London Rd off-ramp

Location 2:
N1 South After
William Nicol on-ramp

This hijacking was detected by the TMC operator who tracked the vehicle on camera while alerting the traffic authorities.

Smart Roads

Freeway Management Systems in Gauteng, KwaZulu-Natal and Western Cape

For SANRAL, road safety is about more than just reducing the number of crashes on the freeways that result in fatalities and serious injuries. In a bid to ensure the safe passage for motorists, SANRAL has installed Freeway Management Systems (FMS) in the Western Cape, Gauteng and KwaZulu-Natal.

WESTERN CAPE

In the Western Cape, the FMS is permanently monitoring nearly 180km of the busiest freeways in the province, with real-time information and quick response times from the emergency and traffic services. This coverage includes sections of the N1, N2, N7, R300 and M5.

In pursuit of continuously improving the services offered by the FMS, the network's coverage was extended in the past year, on the N1 to the eastern side of the Huguenot Tunnel, through the Du Toitskloof Pass. The addition of 14.7km brings the network to a total of 179.7km. This extension included the addition of 22 new closed-circuit televisions (CCTVs) and three variable message systems. Communication protocols with emergency services covering this section of the N1 towards Rawsonville were also established. At the same time, an FMS link was installed to provide the Transport Management Centre (TMC) with footage inside the Huguenot Tunnel, for broader dissemination of incident details.

Further upgrades include the enhancement of the existing network on the N2 through Somerset West to bring all devices onto optic fibre communications, thereby improving the stability and reliability of the system.

FMS links to other stakeholders have been encouraged with the implementation of critical and strategic stakeholders. Some of the new FMS links established include the UCT Civil Engineering Department at the Transport Research Laboratory and the City of Cape Town Traffic Department at Gallows Hill in Green Point. An agreement was recently signed to implement a link with the Cape Town and Provincial Traffic Training facility at Gene Louw Traffic College.

The FMS system also plays a vital role in the fight against crime. An additional CCTV camera was installed on the N2/R300 corridor, identified as a criminal hotspot in late October 2019. Prone to smash-and-grab incidents, this additional CCTV camera alone has resulted in several rapid responses to incidents, leading to some arrests.

The FMS is in the process of being implemented on the N1 near De Doorns, another section plagued by criminal activity, including a spate of attacks on freight and delivery vehicles. A total of 22 CCTV cameras have been installed on this route, with final commissioning underway.

Thanks to these installations, FMS operators are now detecting incidents on the freeway in under three minutes on average. They are then able to notify appropriate emergency response teams in the shortest possible time.

While SANRAL continues to work with all stakeholders in the road safety and law enforcement sectors to make our roads safer for both motorists and pedestrians, road users must remain vigilant.

GAUTENG

In Gauteng, the Gauteng Freeway Management System (FMS) comprises a set of highly effective tools and features that work in technological harmony, to ensure a better overall road-user experience.

A unique feature of the Gauteng FMS is that this project is funded by the Open Road Tolling (ORT) project. Through this funding mechanism SANRAL can put in place additional measures to ensure the safety of the road user. One such additional feature is the implementation of the On-road Services (ORS) designed to assist road-users during any of a range of incidents that occur on the Gauteng freeways regularly.

The service consists of Incident Response Units (IRU), Medical Response Units (MRU), Light Vehicle Towing Units (LTRU) and Heavy Vehicle Towing Units (HTRU). Managed and dispatched from the TMC, the ORS provides a complimentary service to the traffic police and emergency services. Strict Key Performance Indicators (KPIs) determine the time within which ORS responds to an incident.

During peak periods, ORS are stationed at strategic high-incident hotspot locations. These locations are determined using data analytics at the TMC, which integrates a variety of Intelligent Transport Systems (ITS) applications to facilitate the coordination of information and services within the transportation system. With a fleet of 34 vehicles, SANRAL responds to an average of 700 incidents per month.

The system is not without challenges. SANRAL is still in the initial phases of implementing ITS and funding constraints delay extending the footprint across the country. Research into measures of effectiveness is ongoing and the Agency is making a concerted effort to engage stakeholders and road users through vigorous educational campaigns.

KWAZULU-NATAL

The KwaZulu-Natal network covers a total distance of 187km of national roads. The network infrastructure includes 156 CCTV cameras, 62 Vehicle Detection Systems (VDS) and 25 Variable Message Signs (VMS). These devices are monitored, managed and maintained by the TMC on a 24-hour, 365-day basis. The primary aim of this centre is to manage incidents from the time of detection to the reinstatement of free-flow traffic.

In using the above field devices, the TMC's average detection time was around two and a half minutes per incident. The video footage captured by the TMC is valuable data for criminal investigations. All incidents captured by the system are stored indefinitely. The TMC currently provides law enforcement with any footage available to assist with their investigations.

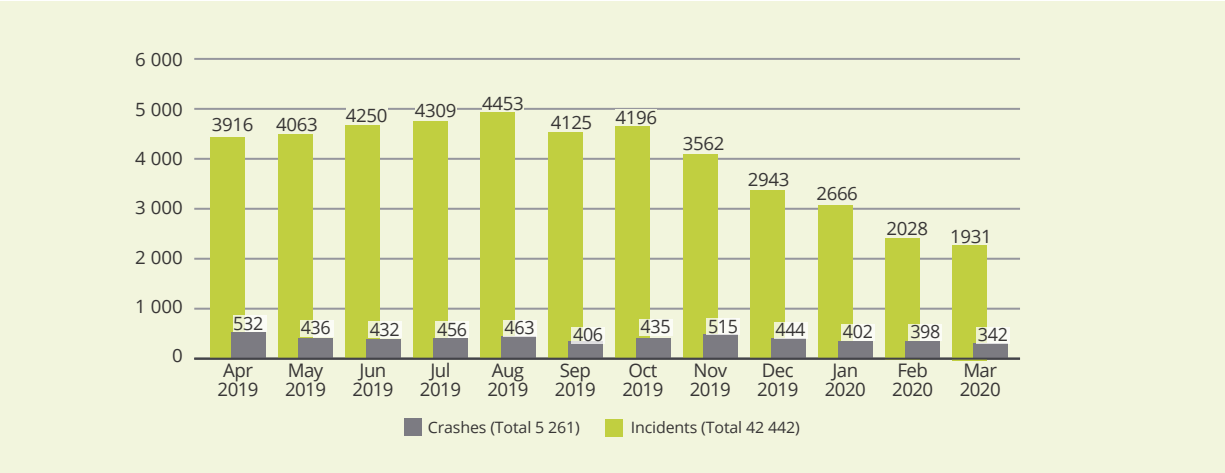
Pedestrian incidents, especially pedestrians walking on or crossing freeways, are recorded on the system as an incident. There were 52 recorded incidents involving pedestrians.

Gauteng Freeway Management System

The Gauteng network covers 251km of national roads. The infrastructure includes 289 CCTV cameras, 111 Video Detection Systems (VDS) and 58 Variable Message Signs (VMS).

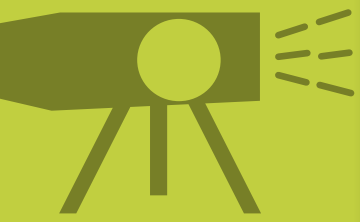
Between April 2019 and March 2020, a total of 42 442 incidents were recorded on the network. The total number of crashes was 5 261, averaging 440 accidents per month.

Gauteng - Monthly Incident Statistics



TMC's average detection time was around three and a half minutes per incident. All incidents captured by the system are stored indefinitely.

Gauteng recorded a high number of pedestrian incidents: a total of 239 incidents in 2019/20 with 80 accidents resulting in 43 fatalities.



Caught on camera

In one incident, a fire was detected on Du Toitskloof Pass. A review of the video showed the fire was started by individuals driving a clearly identifiable vehicle. The vehicle was followed until the registration number could be seen at the Huguenot Tunnel Plaza. It was given to the SAPS investigating officer and the owner of vehicle was fined.

Western Cape Freeway Management System

The FMS network was extended in the past year, on the N1 to the eastern side of the Huguenot Tunnel through the Du Toitskloof Pass. An additional 14.7km was added to the network, taking it from 165km to 179.7km.

This extension included 22 new CCTV cameras and three Variable Message Signs (VMS). Communication protocols with emergency services covering the N1 towards Rawsonville were also established and an FMS link was installed to provide footage inside the Huguenot Tunnel.

CCTV cameras have assisted in fighting crime. An additional CCTV camera was installed in October 2019 on the N2/R300 corridor—a criminal hotspot—to monitor smash-and-grab incidents. Multiple images of the suspects were compiled and distributed to the Metro Police. This vigilance and rapid responses have led to arrests.

A further 22 CCTV cameras were installed and are in the process of being commissioned on the N1 De Doorns, a section also riddled with criminal activities, including a spate of attacks on freight and delivery vehicles. Through these cameras, faster response times to incidents are expected.

WESTERN CAPE	Apr 2018 - Mar 2019	Apr 2019 - Mar 2020
CCTV cameras	239	262
Vehicle detector stations	82	82
Electronic message boards	50	52
Average incident detection	0:02:55	0:02:52
Incidents	31 469	44 023
Crashes	3 304	3 264
Incidents per month	2 622	3 669
Crashes per month	275	272
Percentage increase on previous year incidents		39.9%
Percentage increase on previous year crashes		-1.2%

In the Western Cape, incidents increased by 39.9% mainly due to the increased reach of the FMS into hazardous locations and subsequent improved detection and reporting of all vehicles stopping on the shoulder. The incidence of crashes was reduced by 1.2% and pedestrian crashes and pedestrian fatalities by 3% during the reporting period.

Further upgrades included enhancing the existing network on the N2 through Somerset West, bringing all devices onto optic fibre communications (previously on radio communications), thereby improving the stability and reliability of the system. FMS links to critical and strategic stakeholders have been encouraged. These include the UCT Civil Engineering Department at the Transport Research Laboratory and the City of Cape Town Traffic Department at Gallows Hill in Green Point. An agreement was signed to implement a link with the Western Cape Government Provincial Traffic Training facility at Gene Louw College. Such links assist our coordinated approach to Road Incident Management.

KwaZulu-Natal Freeway Management System

The KwaZulu-Natal network covers 187km of national roads. The infrastructure includes 156 CCTV cameras, 62 Vehicle Detection Systems (VDS) and 25 Variable Message Signs (VMS).

Between April 2019 and March 2020, a total of 9 364 incidents were recorded on the network. The total number of crashes was 1 289, averaging 107 crashes per month.

KwaZulu-Natal – Monthly Incident Statistics

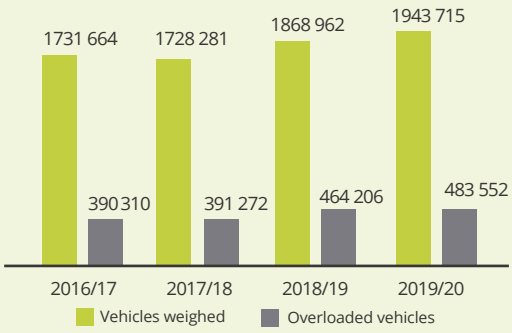
The TMC's average detection time was around two and a half minutes per incident. There were 52 recorded incidents involving pedestrians.

1.2.6 Combatting vehicle overloading

Heavy vehicle overloading is a significant problem, damaging roads and increasing the risks to road safety. SANRAL has set up weighbridges on national routes and works with local law enforcement authorities to impose penalties for overloading.

In 2019/20, approximately 8.4m vehicles were screened using weigh-in-motion devices at weighbridges. A total of 483 552 vehicles that were possibly overloaded were directed for weighing on the static scale.

Vehicles weighed at SANRAL weighbridges and number overloaded



Value of fines imposed	R42.8m
Value of fines paid	R7.1m
Number of drivers arrested	1 027
Number of drivers warned	451 971
Number of drivers charged	31 527
Percentage of overloading of all vehicles statically weighed	23%

Overloading control measures by concessionaires

Two of the concessionaires have facilities for weighing vehicles and relationships with relevant traffic authorities to impose sanctions where required. Data on overloading is collected and analysed.

- At Bakwena weighbridges fines to the value of R6.9m were imposed and R1.6m in fines was collected during the year.
- At TRAC weighbridges fines to the value of R9.2m were imposed and R1.1m in fines was collected during the year.
- At Heidelberg Traffic Control Centre (TCC), weighbridges fines to the value of R5.2m were imposed and R799 275 in fines was collected during the year. There are also facilities at Midway and Mooi Mpofana.

	TRAC	Heidelberg Traffic Control Centre	Bakwena
Total number of vehicles weighed	873 294	216 129	356 809
Overloaded but within grace limit	213 728	60 740	93 586
Overloaded	10 854	4 636	6 778
Weighbridges fines imposed	R9.2m	R5.1m	R6.9m
Weighbridges fines collected	R1.1m	R799 275	R1.6m

Vehicle safety inspections

SANRAL has seven vehicle inspection facilities at major weighbridges which tested 6 568 vehicles in 2019/20. Of these, 62% failed to meet road safety standards. Traffic police on site either issued fines to the drivers or removed the vehicles from the road.

Traffic monitoring

Five traffic monitoring contracts were active during 2019/20. There were 861 long-term traffic-monitoring stations in operation and 291 short-term traffic-monitoring counts were conducted. Of the SANRAL network, 94% has a traffic count not older than three years.

1.3 TRANSFORMATION OF THE CONSTRUCTION SECTOR

In 2017, SANRAL embarked on a journey to reposition itself in the industry. By doing so, the Agency sought to create relevance for its stakeholders by adding value through SANRAL projects. For SANRAL, adding value means growing, developing, empowering and transforming the construction and related industries.

SANRAL realised that the barriers to entry, including a lack of access to funding and equipment, required intervention in the various value chains. One of the strategies that has been employed to do this is the establishment of strategic partnerships with key industry players, including private sector companies who are at the apex of the supply chains in which SANRAL operates.

The purpose of these partnerships is to:

- promote fair competition in the construction industry;
- increase opportunities for access to funding and equipment;
- provide technical support; and
- train, develop and mentor small black-owned contractors.

These partnerships enable especially small black-owned contractors, black professionals and suppliers to access direct development support from our partners, which will assist them in participating in SANRAL projects, including the more significant projects which were previously dominated by larger companies.

This initiative has manifested in several Memorandums of Understanding (MoU) that formalise this initiative between our partners and us and have been established in two sectors:

a. Equipment suppliers

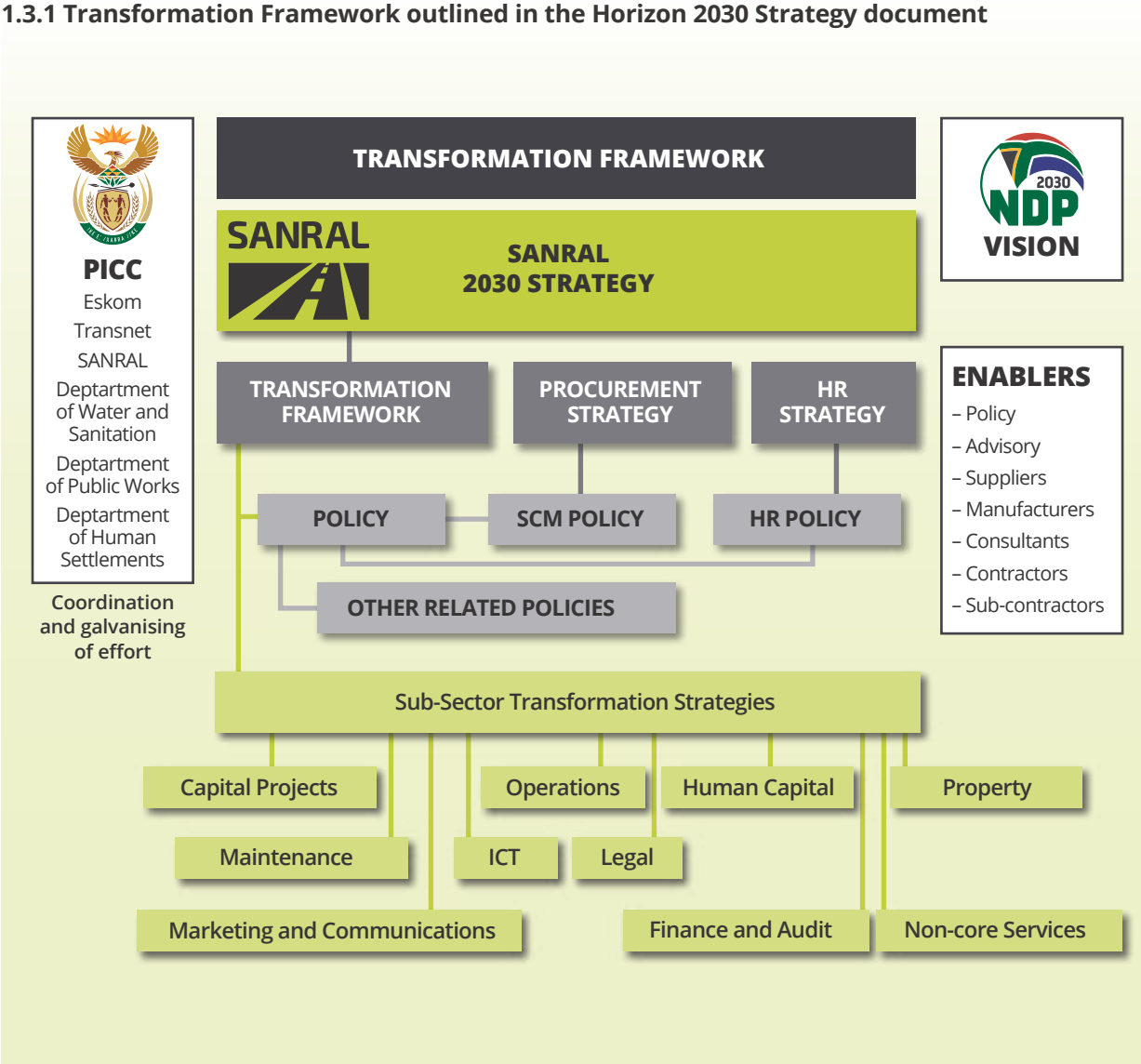
- Bell Equipment
- Barloworld Equipment
- Wirtgen Group
- Pilot Crushtec

b. Mentorship and training

The National African Federation of the Building Industry (NAFBI). Economic access facilitation, capacity building through mentorship and training as well as business linkages and networks.

SANRAL is currently in talks with the South African Forum of Civil Engineering Contractors (SAFCEC) for another MoU within the mentorship and training environment, as well as with the Development Bank of Southern Africa (DBSA), Industrial Development Corporation (IDC), Small Enterprise Funding Agency (SEFA) and Absa bank, for funding of SMMEs.

1.3.1 Transformation Framework outlined in the Horizon 2030 Strategy document



Under the Transformation Policy, SANRAL promoted joint ventures, consortia and other partnerships in its projects to ensure inclusivity, participation and growth of black-owned businesses.

SANRAL uses its procurement processes to implement its Transformation Policy, which aims to maximise the participation of black contractors, professionals and suppliers in its commissioned projects. It does this through:

- ensuring black individuals and companies other than those of the existing monopolies participate in the supply chain for construction materials, equipment, technologies and systems; and
- promoting structural development programmes and partnerships to speed up the development, growth and participation of black entities, including small contractors—owned mainly by women and black entrepreneurs—in the industry.

SANRAL has used empowerment agreements with entities at the apex of supply chains for construction materials, equipment and other supplies to level the playing field and ensure emerging entities were able to secure and supply materials and equipment for SANRAL's commissioned projects.

The Agency aims to increase the number of community development projects undertaken in small towns and villages adjacent to its road network by training, developing, mentoring and nurturing new black contractors in rural areas. See Section 4.3 for further details.

SANRAL also developed a sliding-scale model to assist small enterprises in developing and progressing from sub-contracting to tendering for more complex projects.

1.3.2 Equity of contracting companies

In 2019/20, black-owned companies were awarded 75% of the value of contracts. Of the approximate R6.9bn total tender amount awarded, R5.2bn was awarded to black-owned contractors. These figures represented a strengthening of participation by black contractors in the construction and maintenance of national roads.

The increase in presence of black women and youth among emerging construction contractors is particularly encouraging. Approximately R2.1bn went to female black-owned contracts and R25m to youth black-owned contractors.

Value of SANRAL 2019/20 awarded contracts by ownership of service providers

Description	Amounts
Female black-owned	R2 197 019 726
Male black-owned	R3 019 608 392
Total black-owned	R5 216 628 118
Total white-owned	R1 744 886 304
Total awarded contracts	**R6 961 514 422**

Share of 2019/20 by ownership of service providers

Description	Value of contracts %
Total black-owned	75%
Total white-owned	25%

Note: percentages have been rounded up

Competency certification of black-owned companies

The Construction Industry Development Board (CIDB) operates a voluntary grading system. CIDB registration is a pre-requisite for companies to compete for SANRAL construction work. Accreditation by the CIDB shows a significant number of companies with low CIDB grading share contracts that have a small collective value.

SANRAL awarded contracts to 24 CIDB-graded companies with a majority of black shareholders. As per the table below, the majority of black-owned companies have capacity at the top end and this will surely grow.

CIBD gradings of registered black-owned construction companies

Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Total
Number	0	0	0	0	0	8	3	5	8	24
Percent	0%	0%	0%	0%	0%	33%	13%	21%	33%	100%

2. FUNDING CAPITAL

The following summary serves to indicate how SANRAL's management of funding capital complements other aspects of its value creation.

SANRAL has two distinct areas of business, the operation of toll roads and the operation of non-toll roads, which are funded in different ways.

An annual grant from the national fiscus, under Budget Vote 35, funds the development, upgrading, repair and maintenance of national roads that are not subject to tolling. These comprise 87% of the national road network.

Toll levies and borrowings on commercial markets have been the main sources of finance for the development, upgrading, repair, maintenance and operation of national toll roads managed directly by SANRAL. These constitute some 7% of the national road network. However, due to the under-collection of e-tolls on the Gauteng Freeway Improvement Project (GFIP), government grants have become a significant supplementary source of funding for the toll portfolio.

There are toll roads—comprising the remaining 6% of the national road network—for which 30-year concessions have been granted to private companies. These companies, TRAC, N3TC and Bakwena, have concluded public-private partnerships with SANRAL for the construction, maintenance and operation of the relevant routes.

Under these arrangements, the concession holders are responsible for raising capital for road construction, servicing this debt and funding all upgrades, rehabilitation and maintenance, as well as operational costs. Toll revenue on these routes accrues to the concession holders. At the end of the concession period, the roads are to be handed back to SANRAL and must comply with specified standards at the time of transfer.

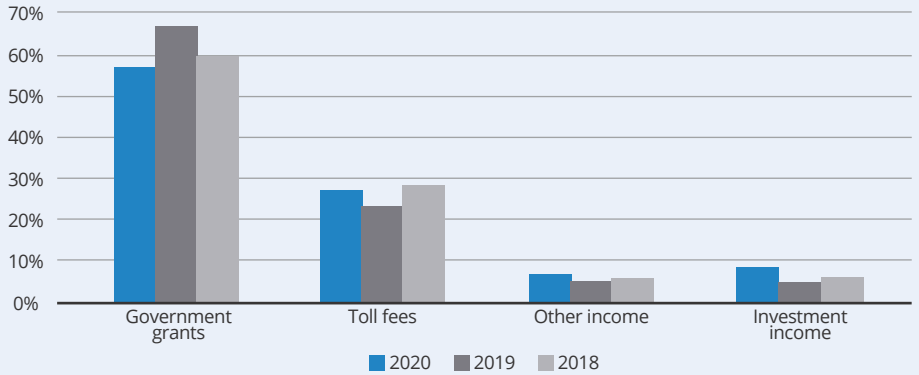
2.1 ANNUAL INCOME

SANRAL recorded total revenue of R13.590bn in 2019/20 overall, across the non-toll and toll portfolios. Government grants constitute the largest source of revenue for SANRAL, followed by toll fees collected from road users. Sanral also received investment income of R1.478bn and other income of R1.071bn, bringing the total income to R16.139bn

Main sources of revenue 2019/20
R'000

Government grants (non-toll)	R6 551 922
GFIP grant (toll)	R2 667 939
Toll income	R4 370 120
Investments	R1 478 132
Other Income (sundry, concession and rental)	R1 071 320

Total income



2.1.1 Non-toll road revenue and expenditure

The annual grant made by National Treasury to SANRAL in respect of capital and operational expenditure on non-toll national roads amounted to R21.177bn in 2019/20. This grant has increased steadily at a rate above inflation since SANRAL's inception. The latest year-on-year increase amounted to an average of 15%.

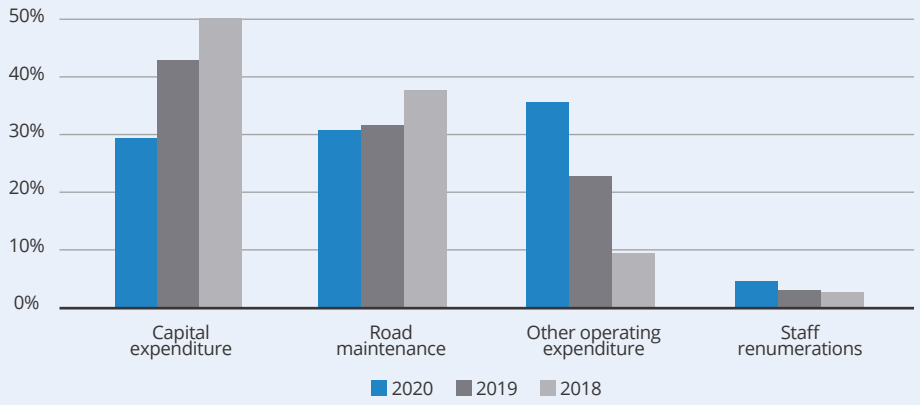
SANRAL capitalises a portion of the Treasury allocation each year and defers it in order to utilise funds at a later stage on capital projects. In 2019/20 the capitalised amount was R3.020bn. The remainder of the annual grant is allocated to road maintenance and operation in the applicable financial year.

Other revenue for non-toll road management is derived from:
- Previously deferred grants that are realised in the current year.
- Deferred income realised in the current financial year amounting to R2 150bn.

Total capital expenditure on construction projects on non-toll roads amounted to R2 846bn in 2019/20 and operational expenditure to maintain these roads to R2.274bn.

The main categories of expenditure on non-toll roads were:

Non-toll expenditure



Non-toll roads	Number of projects	Length of road involved (km)	Cost ('000)
Routine maintenance	234	20 812	2 020 552
Ad hoc maintenance	5	646	67 613
Periodic maintenance	20	26	79 135
Special maintenance	14	164	106 673
Total	**273**	**21 648**	**2 273 973**

Non-toll roads capex	Number of projects	Length of road involved (km)	Cost ('000)
Strengthening	8	46	470 876
Improvements	15	45	1 052 570
New facilities	24	48	1 322 615
Total	**47**	**139**	**2 846 061**

There was a surplus of R14bn in respect of non-toll functions in 2020 (compared to a deficit of R4.5bn in the previous year), mainly due to a decline in road maintenance expenditure and a slowdown in rehabilitation and upgrading projects.

2.1.2 Toll road revenue and expenditure

SANRAL's toll roads comprise the following:

- Sections of the N1 in the Western Cape, Free State, Gauteng and Limpopo north of Bela Bela
- A section of the R31 near Brandfort in the Free State
- Several sections of the N2 in the Eastern Cape and KwaZulu-Natal, including near King Shaka Airport
- A short stretch of the N4 just west of Pretoria
- The N17 from Gauteng through to Ermelo in Mpumalanga
- The Gauteng freeway system (N1/N3 and R21)

Total toll revenue realised on these routes during 2019/20 was R4.370bn, representing an increase of 3% against the previous year. The tariff adjustment for the year was restricted to a CPI-related rate of 4.9% and the improved revenue was mainly due to increased traffic volumes on these roads.

The Gauteng Freeway Improvement Project (GFIP) showed a decrease of 4% in revenue. This project is the only SANRAL toll route that receives a government grant. This grant is intended to offset the discounts on tariffs instituted in response to public opposition to tolling on Gauteng freeways.

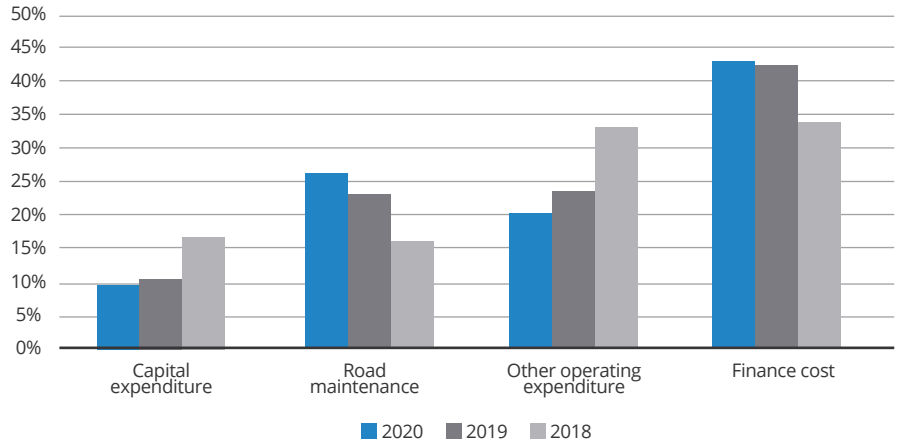
In 2019/20, this grant amounted to R2.668bn. The Minister of Transport, as SANRAL's sole shareholder, approved a transfer of R2.5bn to the GFIP account from the non-toll government grant to reduce the expected shortfall.

All other toll roads operated by SANRAL realised an increase in revenue of 4%, mainly due to the tariff adjustment and the rest due to increased traffic.

Total capital expenditure on construction projects on SANRAL toll roads amounted to R412m in 2019/20 and operational expenditure to maintain these roads amounted to R2 400bn.

The main categories of the total expenditure on toll roads were:

Toll expenditure



Toll road maintenance	Number of projects	Length of road involved (km)	Cost ('000)
Routine maintenance	52	3 943	2 148 912
Ad hoc maintenance	4	190	23 305
Periodic maintenance	3	1.15	6 732
Special maintenance	1	0.194	875
Total	**60**	**4134.344**	**2 179 824**

Toll road capex	Number of projects	Length of road involved (km)	Cost ('000)
Strengthening	0	0	0
Improvements	1	1.01	56 231
New facilities	6	11	356 041
Total	**7**	**12.01**	**412 272**

The net profit for the year was R1.107bn. Notwithstanding the improved revenue flow for toll roads and the overall reduction of the cost of operating these roads, this was 58% lower than operating profit earned in 2018/19 (R2.627bn).


STOP
Toll gate
MN05
MN06
SHESHA
LANE

2.2 TOLL ROADS UNDER CONCESSION

Toll road concessions are a form of public-private partnership in which concessionaires undertake the responsibility of raising finance for developing specific roads and managing the construction and maintenance of these roads. In return, they have the right to realise revenue from these public assets in the form of toll levies.

Details of the national toll roads under concession and the companies granted 30-year concessions can be found in the section on Manufactured Capital (see p25). All three companies—Bakwena, N3TC and TRAC—are non-listed entities purpose-built for toll road development and management. They all include among their shareholders the Public Investment Company (PIC), which manages investments for the Government Employees Pension Fund (GEPF) and the Unemployment Insurance Fund (UIF).

The toll roads under concession and the companies responsible are as follows:

- TRAC manages the N4 eastward from Pretoria to Maputo for the period 1997 – 2028.
- N3TC holds the concession for the N3 between Cedara in KwaZulu-Natal and Heidelberg in Gauteng for the period 1999 – 2029.
- Bakwena manages two routes: the N1 between Pretoria and Bela Bela in Limpopo and the N4 going west from Pretoria to the Botswana border. This concession is for the period 2001 – 2031.

The relevant companies raised initial capital for the construction of the toll roads under concession by shareholder contributions and borrowings on capital markets. The servicing of this debt is entirely the responsibility of the concession holders.

2.3 LAND PORTFOLIO MANAGEMENT

A total of 358 properties (amounting to 203 leases) were leased in 2019/20 and realised an income of R23 097 659 during the year. Properties include SANRAL's head office and its regional offices. SANRAL has three green buildings in Tshwane, Nelson Mandela Bay and Cape Town that reduce SANRAL's carbon footprint, realise savings in energy consumption and adhere to green principles.

While road reserves are maintained by means of routine road maintenance contracts, the surplus land is managed by a specialised service provider who provides surveying, valuing and general property management services and maintains all of SANRAL's offices. The contract was concluded in 2015 for an initial period of five years and has a value of R943.4m.

The contract requires the service provider to subcontract at least 50% of its work in order to provide opportunities to black-owned SMMEs and smaller companies in the property sector. Despite keen competition for the services of black land surveyors and valuers, this target has been exceeded.

3. INTELLECTUAL CAPITAL

SANRAL lays claim to considerable expertise in the operation of toll roads and freeway management systems. The scope and extent of its projects and the experience of its engineering and managerial staff in planning, developing, maintaining and operating our major road networks determines the Agency's precious intellectual value. SANRAL's collaboration with universities and research institutes contributes to knowledge generation and innovation in fields such as transportation planning, road materials development, environmental conservation and much more.

3.1 GEOTECHNICAL SOLUTIONS

SANRAL's innovative use of geotechnical/geophysical techniques to map the underlying geology and identify areas to be avoided, showcased our creative engineering processes.

An example is the use of geotechnical monitoring to assist in the refurbishment of anchored slopes and structures between the Huguenot Tunnel and the Hex River Pass and at the Sir Lowry's Pass viaduct. Similarly, geotechnical/geophysical techniques were used to accurately map the underlying geology, mostly in the North West, to inform the determination of the route and ensure the best technical and cost-effective solutions.

Another example of SANRAL's engineering skill was the Mhlatuze River Bridge. This construction of a 240m, eight-span structure comprised 48 precast post-tensioned I-beams carried on solid reinforced concrete wall-type piers on piled foundations with pier heads and closed-type abutments, also on piled foundations.

WESTERN REGION

Geotechnical monitoring and refurbishment of anchored slopes and structures

This project, anticipated to take six months to complete, will involve the geotechnical monitoring and refurbishment of anchored slopes and structures. The work will take place on the N1, between the Huguenot Tunnel western portal, at cuttings between Florence and Worcester and at the Hex River Pass, as well as at the Sir Lowry's Pass Viaduct on National Route 2.

The aim was to expose, inspect, maintain, monitor the load and reprotect the cable anchors installed on retaining walls, cut slopes and bridge structures at various sites along these routes.

Tenders for the project ranged between R14.5m and R19.3m and the adjudication is now in process.

EASTERN REGION

Upgrade of the N2

The project is located on Sections 28 and 29 between the Mtunzini Toll Plaza and the Empangeni T-junction. The aim was to construct a new two-lane northbound carriageway adjacent to the existing single carriageway road. The total cost of the project was R1.1bn and it was completed on 2 December 2019.

Geotechnical solution: Augured piles for the Mhlathuze River Bridge

The new carriageway required the construction of the new bridge structure across the Mhlatuze River. This 240m, eight-span structure, comprised eight supported 30m deck spans. These spans comprise 48 precast post-tensioned I-beams carried on solid reinforced concrete wall-type piers on piled foundations with pier heads and closed-type abutments, also on piled foundations. The overall bridge width between parapets caters for a 13.4m roadway.

Previously extended abutments and seven new wall-type internal piers supports were added. Each pier is supported on ten 900mm bored and augured-type piles ranging in depth from 48m to 60m. The existing pier foundations are supported on driven piles, founded in a boulder layer at a depth of approximately 35m. This piling technique could not be applied to the new structure in case the vibrations generated by driving the new piles caused movement and settlement within the boulder layer.

The chosen system of boring/oscillating the piles to a depth between 48m and 60m presented its challenges, particularly on the raked piles. The extreme depth and rake of the piles resulted in the loss of equipment and abandonment of the pile on two occasions.

Selection of socket depth to each pile had to be individually determined as the geological stratification consisted of alternating bands of clay and rock of variable thickness and cretaceous fossils overlaying the basement granites.

NORTHERN REGION

Geotechnical solutions to map underlying geology

This project sought to improve mobility planning by using geotechnical/geophysical techniques to accurately map the underlying geology to inform the determination of the route and ensure the best technical and cost-effective solutions.

The area covered was from west of Klerksdorp up to the east of Fochville, mostly in North West province and to a lesser extent in Gauteng along a wider N12 corridor.

Options for improved mobility of the N12 along a new "greenfields" alignment avoiding Klerksdorp and Potchefstroom proved problematic as the area is greatly influenced by geological conditions and undermined areas. The geology of the area is dominated by dolomite and large parts have been extensively mined for gold. Cavities or areas of potential

collapse in dolomite are very variable and highly unpredictable. Exploration by conventional methods of drilling are unreliable due to the variability of the dolomite and are also very expensive if done extensively for all potential route options. The proposal was to use innovative alternative geotechnical/geophysical techniques to map the underlying geology accurately, to identify areas best avoided due to either the safety of the geology or very costly remedial measures, or due to previous or potential future mining.

The cost was R50m for the area covering all eight initially identified route options. The project is waiting for the finalisation of the proforma tender document for the geophysical work. The scope of works was prepared with cost estimates included in the proforma document. The estimated completion date is unknown.

3.2 INNOVATIVE ROAD DESIGN

SANRAL engineers' innovative proposal of a network arch bridge to span the N3 with a very slender deck is an example of the ingenuity and professionalism inherent in our teams.

Similarly innovative was our project to extract value for reuse from existing concrete pavements as opposed to spoiling, which lead to reclaiming and recycling the material used in layer-works and for reuse in new concrete for the N3 Corridor. This initiative has also led to a co-operative project to produce a national guideline for the reclaiming, recycling and use of concrete pavement into new concrete.

EASTERN REGION

INNOVATION 1:

Design of an arch bridge at Spine Road

The road geometry of the N3 and Spine Road could only accommodate a thin bridge deck for the overpass to ensure the minimum clearances were maintained. Due to the N3 being widened in the median, there was no room for intermediate piers. A network arch bridge was proposed to span the N3 with a very slender deck. The use of this type of bridge avoided costly re-grades of the N3 and Spine Road. The basic configuration is a tied arch with inclined hangers allowing for a more slender arch and deck members.

INNOVATION 2:

Improvement of the N3 from the Westville Viaduct to the Paradise Valley Interchange

This project was designed to improve the capacity of the N3 from the Westville Viaduct to the Paradise Valley Interchange, a section of National Route 3 KwaZulu-Natal, between the EB Cloete Interchange ooutside Durban and Pinetown.

The scope of works included capacity upgrades on related infrastructure: Eden Road, Paradise Valley Interchange including Municipal Route 13 (M13) and the Westville Interchange including Spine Road.

The total length of construction is 16 66km at an estimated cost of R1.86bn, with the Spine Arch Bridge estimated at R300m. The status of the project is at Construction Monitoring Tender Phase and it is expected to begin in March 2021 and be completed by June 2025.

INNOVATION 3:

Guideline for reclaiming of concrete pavement for recycling and reuse in concrete

Significant sections of the N3 Corridor between Durban and Pietermaritzburg are concrete. This high-quality material presents an opportunity to extract value for reuse as opposed to spoiling. The material will be reclaimed and recycled for use in layer-works, the highest value being recycling for reuse in new concrete for the N3 Corridor Upgrade concrete pavement layers, as well as for miscellaneous concrete works.

There is no national guideline for the reclaiming, recycling and use of concrete pavement into new concrete. This co-operative project will research and compile a guideline to this effect and will achieve the additional objective of constructing sustainable roads as well as reducing waste generated for the N3 Corridor Upgrade project.

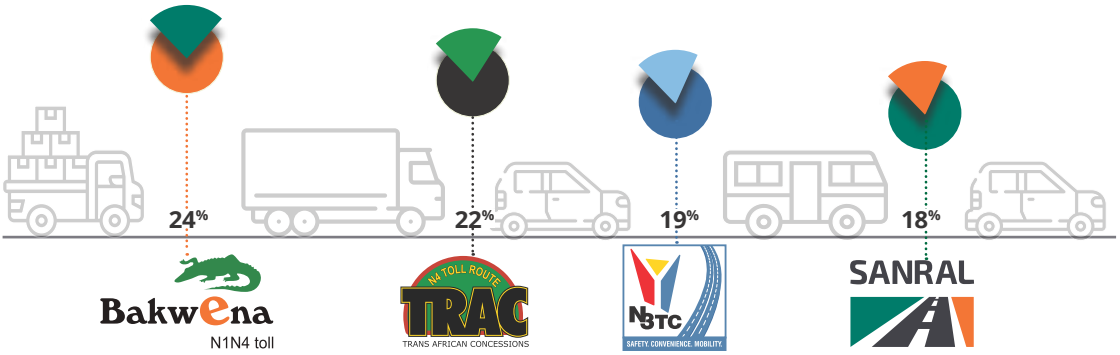
The project is in progress with a desktop study underway. Presently, industry and SANRAL seek equity partnership. The international COVID-19 lockdown has delayed the project.

3.3 AUTOMATED ELECTRONIC TOLL PAYMENT

During 2019/20 the implementation of electronic toll collection at all SANRAL managed toll plazas and toll plazas managed by concessionaires was completed. The adoption of the electronic payment option by many road users has reduced congestion at toll plazas during busy periods. We have seen an increase in the conversion to electronic payments, especially in KwaZulu-Natal.

In 2019/2020, the average electronic toll transactions at SANRAL managed toll plazas per route ranged up to 18% of the total traffic, at a combined value of R824 992 277.

During the same period, the average electronic toll payment transactions of the traffic at toll plazas managed by concessionaires were: Bakwena: 24% of total traffic | TRAC: 22% of total traffic | N3TC: 19% of total traffic.



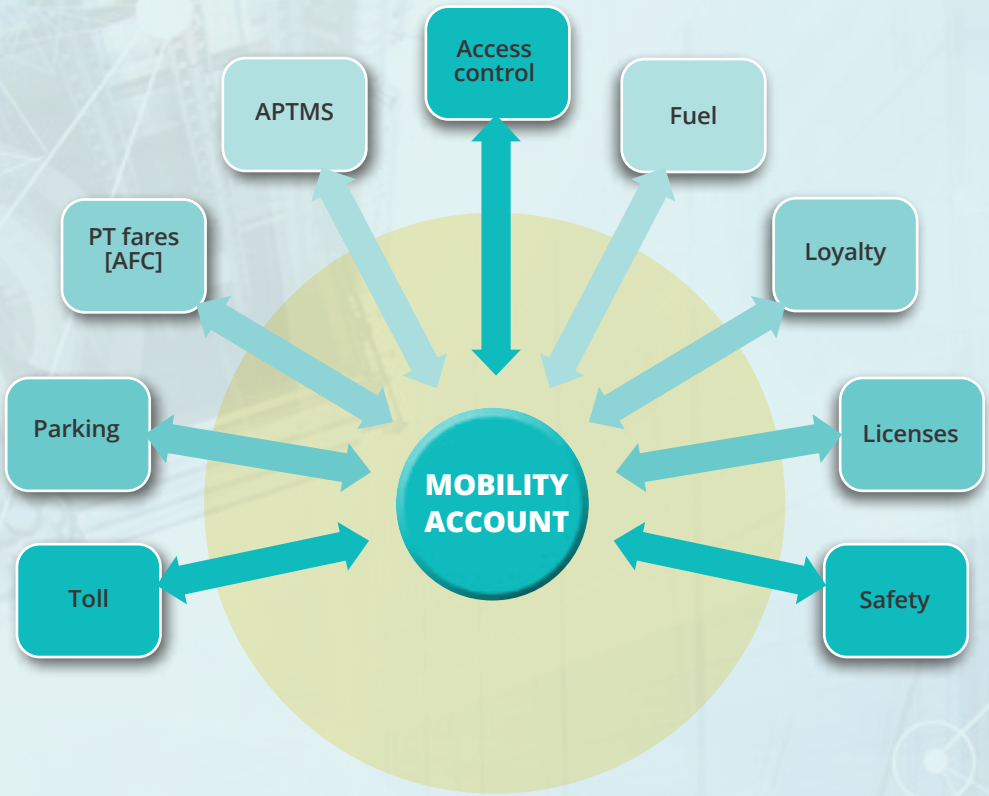
3.4 FUTURE INNOVATION AND VALUE-ADDED SERVICES

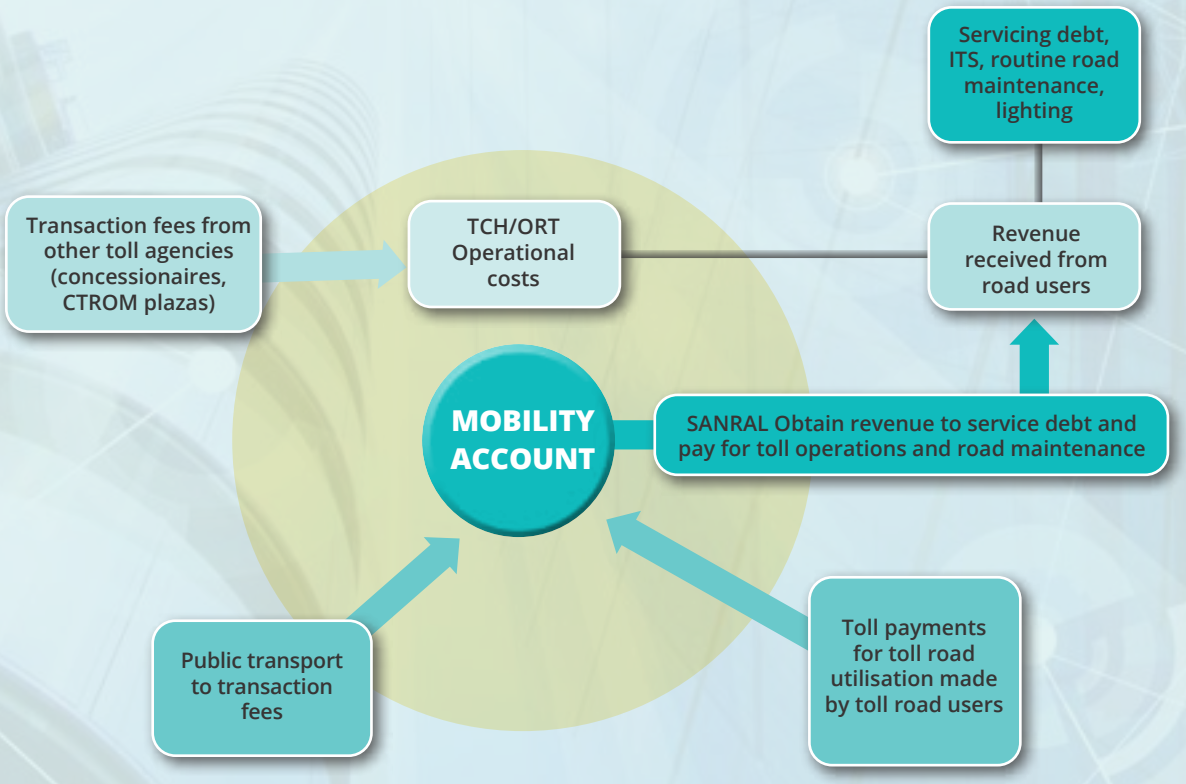
The Value-Added Services (VAS) have been considered for repositioning the Transaction Clearing House (TCH) as a government asset. In this process, the e-toll account becomes a "Mobility Account" that can be used nationally for payment and fare collection in public transport services, facilitating integrated fare collection and management, as well as offering other value-added services. Existing customer service centres can be used for purposes other than toll and can include services such as driver licence renewals.

This model has the potential to recover fees from the services rendered via the TCH, that will amount to more than the TCH operational costs. This surplus can become an additional revenue stream to the project to service debt and other project-related costs.

The focus of the services rendered shifts from pure toll-based services to transport and related services. Integrated Fare Management (IFM) and payment for public transport services, including Bus Rapid Transport (BRT) services, the Gautrain, bus operators and the minibus taxi industry can be achieved via the use of the TCH account and processing facilities. TCH will host a Mobility Account, catering for broader transportation-related payment needs.

Road users can use their account and the GFIP toll customer service centres to renew vehicle and drivers' licences, pay for their parking at the airport and at commercial parking garages, gain access to secured areas such as offices and security estates and make payment for fuel purchases from their TCH account.





Two of the major developments this financial year have been further enhancements to the SANRAL App and the "Proof of Concept" test for the Account-Based Ticketing Solution.

3.4.1 SANRAL App

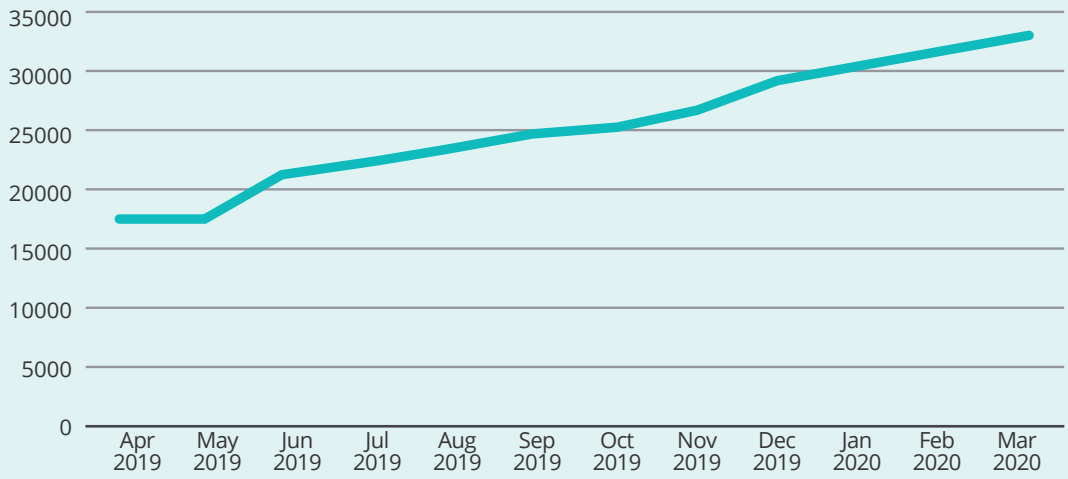
One of the first VAS implementations was the development of the SANRAL App. As part of the additional developments, the parking footprint was widened to include more malls.

The SANRAL App saw increased users and top-ups.

MONTH	NO. OF USERS	CUMULATIVE USERS	MONTHLY TOP-UP VALUES
Apr-19	913	17 024	R2 761 231.45
May-19	368	17 392	R3 688 013.91
Jun-19	3 720	21 112	R3 830 415.46
Jul-19	1 080	22 192	R5 215 355.29
Aug-19	1 112	23 304	R5 710 597.18
Sep-19	1 296	24 600	R5 340 178.26
Oct-19	653	25 253	R5 295 818.95
Nov-19	1 262	26 515	R6 412 226.09
Dec-19	2 712	292 27	R6 851 359.69
Jan-20	1 188	30 415	R6 599 840.29
Feb-20	1 129	31 544	R6 935 841.34
Mar-20	1 303	32 847	R7 265 189.98

This table reflects the number of new downloads per month and the cumulative number of users utilising the SANRAL App in the last financial year.
It also reflects the monthly values received via the app.

The cumulative number of SANRAL App users



The above graph reflects the cumulative number of users utilising the SANRAL App.

3.4.2 Account Based Ticketing

Integrated travel is a critical success factor for sustainable public transport systems. Interoperable fare-collection systems are emerging globally as critical enablers of multimodal, integrated travel. This is facilitated and implemented by SANRAL's Mobility Account, which is the key for interoperable fare collection functionality.

The Mobility Account at the TCH is a significant development of the VAS solutions and can be utilised for an account-based fare collection system. It differs from traditional card-based schemes, as the back office manages the business rules and fare calculation and calculates the fare and billing after the travel is completed. The fare-media to tap in and out of the system is a unique customer identifier and is linked to their account, a concept similar to the current collection of tolls via an e-tag.

Over and above the standard service offering, the system can become a public transport repository. The sharing of data from participating operators through a central data warehouse will provide valuable information for the planning of integrated public transport systems. A public transport data warehouse could include several streams. Currently, there is no central repository of public transport information.

Travel data/usage sourced from fare transactions

This data includes details of trips undertaken on all participating operators' public transport systems. This information is important because it provides a region-wide indication of public transport travel demands necessary for planning routes, schedules and integration with other modes and services. In this way we can deliver optimal mobility and accessibility for commuters. It can also provide the data on which subsidies are calculated.

Real-time data

Incident reporting or delays to public transport services forms the basis for delivering integrated traveller information services.

Supply data

This includes static details of the available public transport services such as routes, stops and schedules which are used for providing route planners.

The Gauteng Department of Roads and Transport has a "One Province – One Card" objective to provide an integrated public transport fare management solution. The TCH can provide the processing capacity for a Gauteng Province back office. It already offers various payment/top-up options and is linked to a retail footprint that accepts payments.

Smart Mobility

New era for transport with cashless smartcard

SANRAL has developed and successfully tested an innovative ticketing system to enable commuters to use a smartcard to pay for different modes of transport, eliminating the need for multiple cards, paper-based ticketing or paying cash for journeys.

SANRAL, in collaboration with the Department of Transport, is looking to launch a contactless, cashless Account Based Ticketing (ABT) system where a smart card enables commuters to tap to pay for all transport costs they incur—whether by taxi, train, or bus.

Similar in concept to the e-tag payment method and using the same technology, commuters will be able to purchase, from participating public transport providers, a card which has a unique identifying number for a Mobility Account. Money is deposited into the Mobility Account via an Electronic Funds Transfer (EFT), monthly debit order, through the SANRAL mobile application (App) or by top-up of funds via vendors and retailers–similar to buying airtime for mobile phones.

Validators fitted in buses, in minibus taxis, at the station gates- or on hand-held devices at train stations will allow for commuters to tap their card to pay for their journey. This single card will work across all public transport services and will be accepted by all participating operators. Such fare-collection systems are emerging globally as key enablers of multimodal, integrated travel.

The ABT system has the potential to eliminate the use of cash, reduce operating costs and improve fare collection efficiency for transport operators. It also has the potential to simplify and enhance the travel experience of millions of commuters who rely on public transport in South Africa.

For transport operators (taxi drivers and bus or train operators) the passenger's fare is calculated and deducted from the card at the time of travel. The operator submits these transactions to SANRAL's back office, after which SANRAL debits commuters' Mobility Accounts and reimburses the operator for all transactions transmitted. This process differs from the current system where operators each issue their own proprietary fare media and manage each system individually, with no interoperability or integration between the different modes.

Once the new technology is launched, commuters will be able to avoid long queues and manage their travel costs more efficiently. Operators and regulators can look forward to operational cost savings and improved reliability and security for their business. Additional job-creation possibilities exist in the informal sector, where vendors will be trained and equipped with hand-held devices which serve to top up commuter cards.

Supporting public transport integration

SANRAL's Transaction Clearing House (TCH) system is designed to provide participating public transport operators with functionality and services to support an integrated network. Thanks to the system, operators can utilise the account-hosting and transaction-processing services offered by the SANRAL TCH to collect fares for ridership services provided to commuters.

Three integration solutions are being considered:

1. **Fare media integration**
   Interoperable fare media describes different fare collection systems capable of accepting the same fare media. Thereby, a commuter may use the same card to pay for a journey on a taxi, bus or train operated by any number of operators. However, this implies that the use of each operator's service is paid for individually.

2. **Fare structure integration**
   Future developments could include different transport operators providing compatible fare structures such as flat-rate fares or distance-based, zonal, or time-based fares. These variations would ensure that commuters are presented with potentially simple and consistent fare schemes throughout a region, thereby promoting public transport acceptance among users.

3. **Fare integration**
   This option is the ability to charge a commuter once for a journey that uses the services of more than one transport operator. In this way, a commuter who would travel for example by bus to a train station and transfer to a train to complete the journey would only pay once for the combined trip from start to finish.

3.4.3 The proof-of-concept demonstration

SANRAL completed a Proof of Concept (POC) in February 2020 to demonstrate the feasibility of the ABT system. The demonstration showed how a commuter could travel on three different public transport services by using the ABT card to pay for fares on each service. Three services participated: ReaVaya Bus Rapid Transit (BRT) service in the City of Johannesburg, the Areyeng BRT in the City of Tshwane and a minibus taxi in the Pretoria CBD.

The ABT Solution is not intended to replace the operators' existing Automated Fare Collection (AFC) systems. Rather, it is to interface their operations to the ABT back-office infrastructure and take advantage of the account hosting and transaction processing services and capabilities offered by SANRAL's TCH.

It will connect operators to a common technology and services platform for commuters to experience integrated public transport services in an integrated public transport network. In the medium to long term, there may be an economy of scale benefit to be leveraged for smaller metros/cities to link directly with the ABT Solution. This will be the subject of future development and agreement by all parties involved.

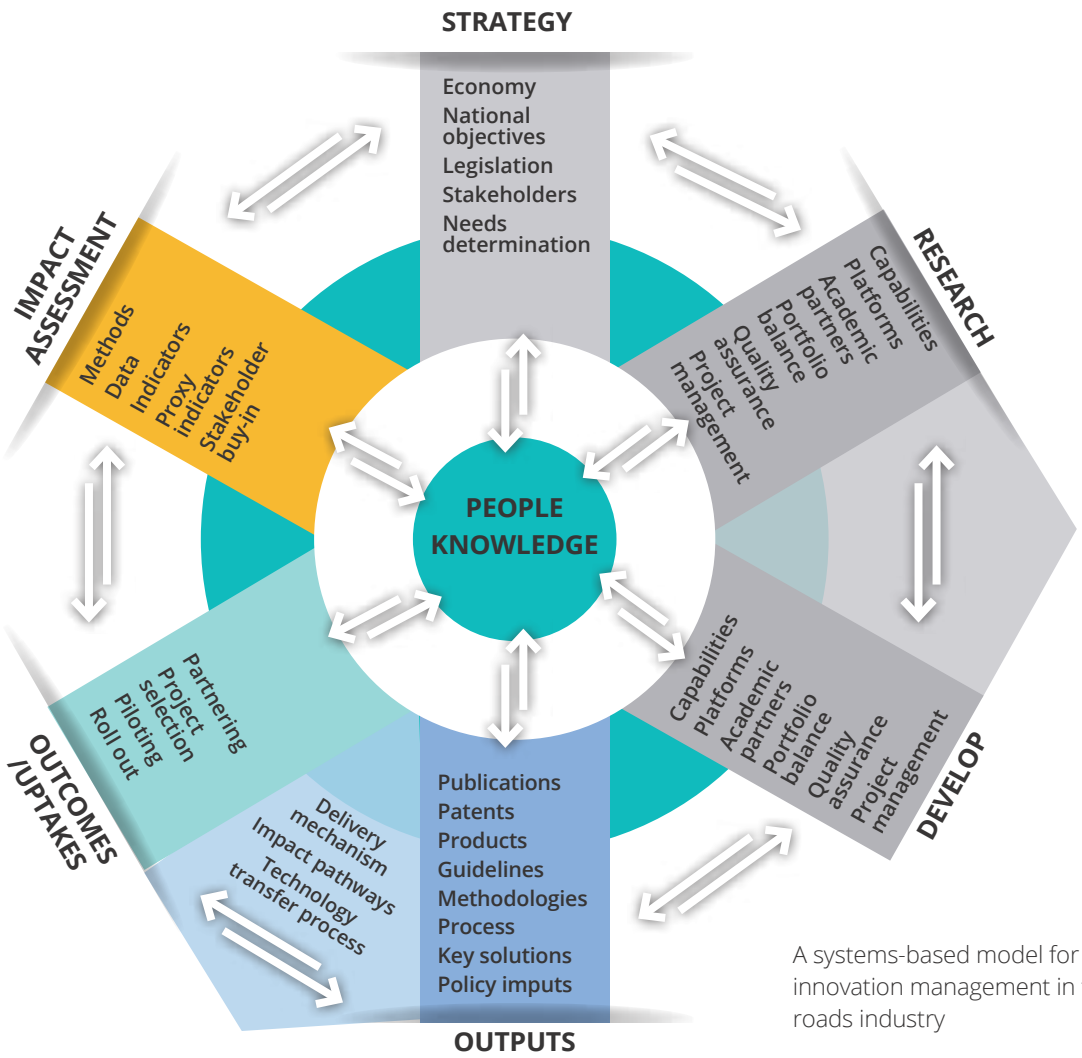
The POC proved that there are significant benefits to the implementation of SANRAL's ABT solution for transit authorities, operators and commuters and the broader South African public transport industry. This level of industry-wide collaboration was made possible by the SANRAL ABT solution design and technology capabilities and related services. The ABT solution will change the landscape of public transport in South Africa to the greater benefit of commuters and operators.

3.5 SANRAL RESEARCH AND INNOVATION PROGRAMME

The transformation of the South African construction and engineering sectors, as well as broad-based black economic empowerment, is paramount. Among the strategic opportunities mentioned are "Harness existing professional skills and support the growth of new skills" and "Use technology and innovation to improve capacity, mobility and road safety." Among the ten strategic objectives are: "Utilise technology, research and innovation to advance the provision, operation and management of the national road system (meet road user needs)."

Horizon 2030 also identifies specific enablers for the strategy which include: human resources; information and communication technology and resource efficiency (specifically sustainable road material use). SANRAL's innovation research and efforts set out to guide and drive advancements in transportation and road building technology to ensure a better transportation system for all people in South Africa. Innovation should increase the value of the current product/method offering and shall have a strong emphasis on the development of new technologies in delivering the SANRAL Horizon 2030 Strategy.

To address the full innovation value chain, the SANRAL research programme shall be managed, as approved by the EXCO–R&D procedures manual, in a holistic, systems approach as depicted below, to ensure maximum benefit and impact from the programme.



A systems-based model for innovation management in the roads industry

The research and innovation programme identified clear research focus areas to address the delivery of the Horizon 2030 Strategy. The programme was established in 2019 and a research panel was appointed. Master's and PhD students also form part of the panel to enable mentoring and knowledge transfer to the next generation of researchers.

A total of 59 research priorities were identified and categorised into the following seven research focus and sub-focus areas.

1	2	3	4	5	6	7
Technical innovation and future transportation	Transport planning, economics, public administration and management, communication and legal	Pavements	Asset management, electrical and mechanical engineering	Traffic	Road safety	Structures, geotechnical, drainage and hydraulics and environment

Research priorities include themes such as network demand and travel patterns, the behaviour of road users, road safety education and awareness, big data management, sensors and smart roads, geometric design of intersections, road safety engineering and road furniture.

Increasing demands, limited resources and higher expectations will be the driving themes for transportation going forward. SANRAL's research programme aims to create a better South Africa for all. The impact assessment of research requires a holistic approach to measure the effectiveness of the research programme in a variety of priority areas that are key to transforming the country's transportation sector.

These priorities focus on current needs and on identifying solutions for immediate challenges. However, through a technology foresight study, the programme will also take a long-term view and address the technological changes that lie ahead. The technologies associated with the Fourth Industrial Revolution (4IR), cyber-physical systems (CPS) and the Internet of Things (IoT), for example, will profoundly impact the transport sector in the future. A scientific research programme is needed to address these challenges.

The programme is complemented by the Innovation Hub with a dedicated staff compliment to achieve a holistic approach in research and development of the transportation system for the future. The main roles for the Innovation Hub, as approved by the EXCO–R&D procedures manual, shall be:

- facilitating the development of human resources through training programmes and the Technical Excellence Academy;
- ensuring the uptake of research outputs by providing assistance for the initiation of training programmes and assistance in knowledge transfer programmes;
- stimulating practical innovation by initiating pilot projects to evaluate technologies imported from other countries and their applicability to local conditions; and
- to provide support to the Innovation Programme of SANRAL through assistance with needs determination and impact assessment.

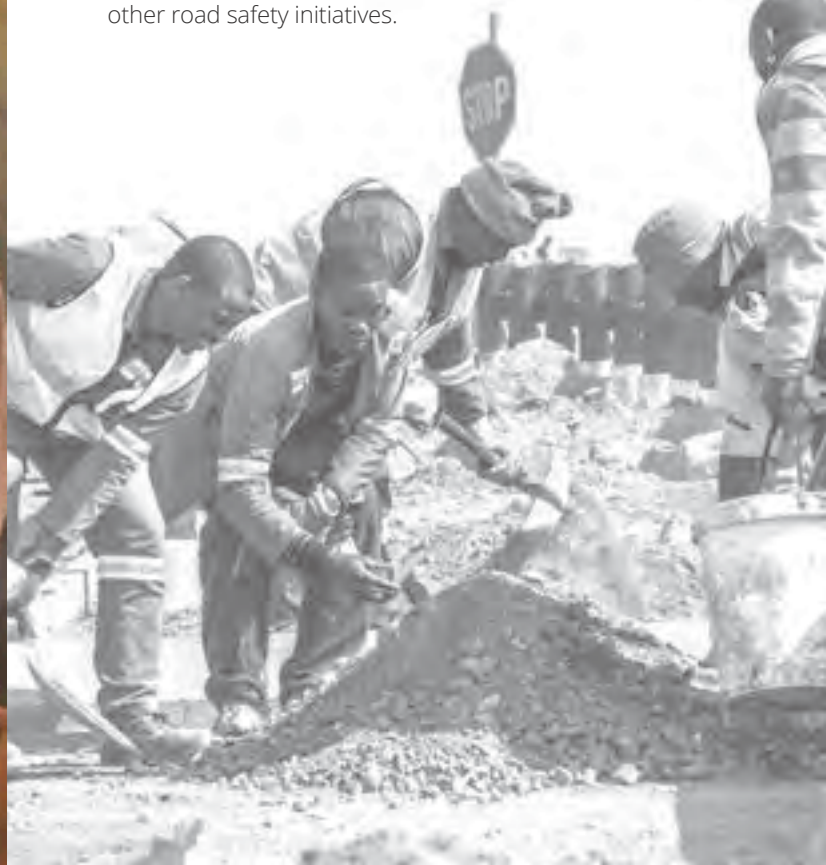
4. SOCIAL AND RELATIONSHIP CAPITAL

Government policy and strategy influence SANRAL's corporate ethic, particularly in how the state-owned Agency builds and consolidates its social and relationship capital. SANRAL leverages road construction and maintenance contracts to help address South Africa's most pressing social and economic challenges. These include widespread poverty compounded by and rooted in historical patterns of inequality, high unemployment especially in rural areas and among young people and women and skills deficits among the most disadvantaged sections of society.

4.1 INTRODUCTION

SANRAL pursues a consultative approach in making sure the public understands and appreciates the Agency's mandate. Road construction always involves several stakeholders and below sets out how we have engaged them.

- Road construction, rehabilitation and maintenance projects that contribute to SMME development, work opportunities and skills training.
- Launching road safety and mobility community development projects in selected residential areas close to the national road network.
- We also collaborated with stakeholders on numerous other road safety initiatives.



SMME's participation
on the Moloto Road Project

Through the Horizon 2030 Strategy, SANRAL is working towards the creation of a national road transport system that serves as an "economic artery" and delivers a better life for citizens who live alongside its projects.

The Moloto Road Corridor spans over 160km of the R573 and runs through three provinces—Gauteng, Mpumalanga and Limpopo. The Mpumalanga and Limpopo sections of the road were declared a national road in August 2015 and the Gauteng section was gazetted as part of SANRAL's road network in June 2020.

The road upgrade is part of the Moloto Development Corridor Initiative which aims to attract new investments and broaden the economic base of the surrounding communities. Benefits of the upgrades include reduced travel time between destinations, as well as improvements in safety through state-of-the-art traffic management features.

The development of SMMEs forms part of SANRAL's broader socio-economic development strategy. Guided by its Transformation Policy, SANRAL aims to ensure that local SMMEs, notably youth- and women-owned businesses, benefit from the project. SANRAL's procurement policy requires 30% of the main upgrade projects to be ring-fenced for SMMEs.

To date, 438 SMMEs have been trained through the programme provided by training providers during priority works contracts within the Mpumalanga section. The training programme is provided for aspiring local SMMEs and aims to develop the necessary business, financial and project management skills, thereby giving participants improved success opportunities.

SMME Participation (continued)

Training type	Number of persons trained
Engineering Skills	71
Entrepreneurial Skills	135
Generic Skills	232

Further training will be provided in future phases of the main upgrade work packages.

Several workshops were conducted throughout the affected municipalities along the R573 to assist SMMEs to get a better understanding of SANRAL's procurement processes. Since the workshops in 2016 in the four local municipalities, more than 700 SMMEs have been registered on the database created for the project.

In addition to the main upgrades, SANRAL will roll out community development projects which include upgrading of access roads, among other identified activities. The targeted SMMEs are emerging contractors with CIDB grades 1 and 2 that are seeking opportunities to learn and attain formal SAQA (South African Qualifications Authority) accredited level 3 and 4 qualifications, as well as upgrading their CIDB grading.

Once they gain the relevant experience and skill sets from these community projects, they will be able to take on larger projects and contribute to the country's drive towards poverty alleviation and job creation.

4.2 EMPOWERMENT, JOB CREATION AND SKILLS BUILDING

SANRAL provided work to 1 933 SMMEs on road construction, rehabilitation and maintenance projects during 2019/20 and the total amount earned through these contracts was R2 996 837 711.

Black-owned SMMEs derived the most significant benefit, accounting for 73.6% of contracts awarded and 80.2% of the value of work performed.

Number of SMMEs employed and the percentage share of SMME contracts and value of work 2019/20

	Number of SMMEs		Value of Work	
Description	Count	% Split	Total	% Split
Black-owned	1 422	73.6%	R2 402 236 158	80.2%
Non-black-owned	511	26.4%	R594 601 553	19.8%
Total	**1 933**	**100 %**	**R2 996 837 711**	**100 %**

Two-year comparison in % of SMMEs

	% Black-owned contracts	% Non-black-owned contracts
2018/2019	71%	29%
2019/2020	73.6%	26.4%

Two-year comparison in % value SMMEs

	% Black-owned value	% Non-black-owned contracts
2018/2019	61%	39%
2019/2020	80.2%	19.8%

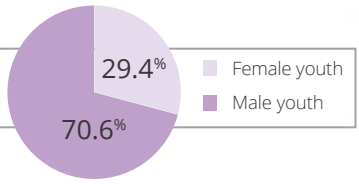
CREATING EMPLOYMENT

The contracting of SANRAL projects resulted in the creation of 19 315 work opportunities in 2019/20. Many of these opportunities arose from limited-term projects and were temporary. They translated to the equivalent of 8 575 full-time jobs (FTEs). Of these, 55.8% of work opportunities were taken up by women. Young men and women under the age of 35 years filled 4 472 (52.2%) of all positions.

Job Creation (Full Time Equivalents)

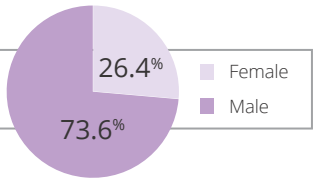
Share of work opportunities for youth

Description	No of FTE	% Split
Female youth	1 314	29.4%
Male youth	3 158	70.6%
Total	4 472	100%



Share of work opportunities by gender

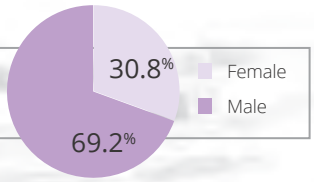
Description	No of FTE	% Split
Female	2 260	26.4%
Male	6 315	73.6%
Total	8 575	100 %



TRAINING OF WORKERS

Contracts opened up training opportunities for 806 workers in 2019/20 and the total number of courses undertaken was 2 001.

Description	Trainees	% Split
Female	248	30.8%
Male	558	69.2%
Total	806	100 %



EQUITY OWNERSHIP

Description	RRM project value	% Split	Non-RRM project value	% Split
Black	R2 434 773 441	82.1%	R3 474 539 590	50.8%
Non-black	R530 429 322	17.9%	R3 366 556 041	49.2%
Total	R2 965 202 763	100 %	R6 841 095 631	100 %

4.3 COMMUNITY DEVELOPMENT PROJECTS

SANRAL's community development projects involve SMMEs in local road infrastructure projects in selected rural localities. These projects, seen as integral to the transformation and development of the construction sector, are usually labour-intensive and generate significant work opportunities.

During the 2019/2020 financial year, the 77 active community development projects ranged from the initiation phase to the completion phase.

Of the 77 active projects, six projects were under construction of which two were completed.

Empowerment and job creation

Community development projects benefited a total of 122 SMMEs of which 94% were black-owned. The value of work completed by these SMMEs amounted to approximately R174m, an 8% increase on the previous year's earnings. Of this amount the value of work completed by black-owned SMMEs was approximately R162m.

Of the 122 SMMEs that were contracted, 114 were black-owned and eight were white-owned.

Benefit for SMMEs

The programme generated 2 880 work opportunities in the reporting year and these were equivalent to approximately 246 full-time jobs.

Job creation and poverty alleviation

Number of work opportunities	2 880
Total earnings of workers	R23 821 574.54
Earnings per work opportunity	R8 271.38

Training and skills building

A total of 971 workers on community development projects received training during 2019/20 and the total spending on training was R3.84m.

Concessionaires building small businesses and creating jobs

Empowerment of small business	Job creation in construction sector
TRAC (N4 Toll Route – Trans African Concessions)	
Value of SMME work R77 241 000	1 792
N3TC (Safety. Convenience. Mobility.)	
Value of SMME work R214 227 000	1 762
Bakwena (N1N4 toll)	
Value of SMME work R63 900 000	1 006

4.4 ROAD SAFETY PROGRAMME

The focus this financial year shifted from the drafting of policy documents to the implementation of the policies, as well as to optimising intervention measures already implemented. We optimised and increased outputs on programmes such as the Road Safety Audit and vehicular and pedestrian hazardous locations.

We developed and tested an Integrated Transportation Information System (ITIS) app to improve crash reporting, which will inform engineering interventions as well as engineering policy, manual and guideline documents. We developed a variety of research topics to gain a better understanding of our road safety landscape which will be taken forward once the research panel is appointed. Work commenced on identifying road safety engineering priorities to provide a self-explanatory and more forgiving road environment that reduces the risk of a severe injury or fatality when a crash occurs.

Action for road safety

From the UN Decade for Action for Road Safety 2011-2020 to the Stockholm Declaration 2020-2030

According to the World Health Organization (WHO), South Africa has one of the poorest road safety records, with approximately one million road crashes reported per year. Around 40 people die on our roads every day and many of the fatalities are pedestrians. While road user behaviour is a significant factor, those responsible for the design and modification of the road system have an equally important role to play.

By ensuring and providing a road environment that encourages better compliance and one that is more forgiving when mistakes occur, the chances of serious injuries and death for all road users are reduced.

SANRAL's record of participation

SANRAL has a responsibility to play a leading role in influencing how South Africans think about and approach road safety in South Africa. One of SANRAL's key responsibilities is to cater to the needs of all road users, including non-motorised forms of transport (NMT). SANRAL has been fully committed to the cause of the Decade of Action for Road Safety 2011-2020, where the primary goal of this global initiative was to halve road deaths by 2020.

At national level, countries were encouraged to focus on five pillars, based on the recommendations of the World Report on Road Traffic Injury Prevention, namely:

1. Road Safety Management
2. Safer Roads
3. Safer Vehicles
4. Safer Road Users
5. Post-crash Care

SANRAL's focus fell on providing safer roads, enhancing road safety through road infrastructure, safer road users as well as improving post-crash care through better communication and mobilisation of the emergency response to crashes.

Safer Roads

Improved and innovative engineering solutions contribute to providing a safer road environment for all road users. SANRAL used both a proactive and reactive approach to safe roads:

- Proactively, SANRAL continuously evaluated the national road network against a set of standards and norms during project design, construction and operation.
- Reactively, SANRAL identified and addressed high-incident areas, where in many cases, solutions required close partnerships with education and traffic law enforcement entities to achieve a safer road environment.

SANRAL promoted pedestrian accessibility and mobility by providing appropriate infrastructure, focussing on:

- Constructing pedestrian and bicycle paths to accommodate non-motorised modes of transport safely.
- Providing effective traffic-calming messages at locations with pedestrian activity.
- Building strategically located pedestrian bridges .
- Creating safe access for communities living next to the SANRAL network.
- Planning and constructing safely located public transport infrastructure.

Safer Road Users

SANRAL's mandate in the road safety arena goes beyond the design and construction of safer roads. The Horizon 2030 Strategy emphasises road safety as a national priority and as such, secures SANRAL's prominent role in road safety education and awareness.

Road Safety Education (RSE) entails the implementation of educational and awareness programmes that lead to changed attitudes and behaviour among all road users. A community development philosophy is embodied in the delivery of programmes offered to all communities adjacent to the declared national network (5km radius), as well as those communities affected by the national network.

SANRAL's road safety education strategy includes content development for learners, the training of teachers and educating community members (parents) to promote the development and formation of appropriate road user behaviour.

In cooperation with the Department of Basic Education (DBE), the SANRAL RSE programme addresses the following educational phases:

- The Foundation Phase (Grades R – 3)
- The Intermediate Phase (Grades 4 – 6)
- The Senior Phase (Grades 7 – 9)
- The Further Education and Training (FET) Phase (Grades 10 – 12)
- Identified stakeholders (parents)

Post-crash response

The national road network has incident management systems installed to ensure the optimal coordinated response to an incident. The intention was to legislate and roll out incident management systems on all major routes in South Africa.

Efficient responses to an incident are of vital importance. SANRAL uses Intelligent Transport Systems (ITS) to manage freeway operations. The use of CCTV video surveillance on urban freeways to detect the occurrence of an incident and notify the relevant emergency authorities ensures a speedier response.

Freeway Management Systems (FMS) have been deployed in Gauteng, KwaZulu-Natal and the Western Cape with enhanced capability to ensure an even more efficient and coordinated response to incidents.

Incident Management System

In 2012, the DoT requested the development of a national framework, which consisted of the following:

- Amendment to legislation (National Road Act and related Acts);
- Operations Policy for a Road Incident Management System (RIMS);
- National Framework for the Road Incident Management Systems (RIMS); and
- National procedure manual for the establishment, implementation and monitoring of an incident management programme on the entire South African road network.

SANRAL has presided over the realignment of RIMS in line with district municipal boundaries, the setting up of structures within systems, the appointment of a chairperson and the constitution of provincial coordinating or advisory committees in each of the nine provinces.

Subsequently, structures were set up throughout the country with an RIMS in place in each district municipality with provincial and municipal roads identified and incorporated.

** According to a 2018 report released by the World Health Organization (WHO), South Africa ranks 159 out of 175 countries in terms of total road deaths per annum, at a cost to the economy of more than R168bn, underscoring the damaging impact of road accidents on long-term national economic growth.*

4.4.1 Contributing to road safety policies

ENGINEERING FOR SAFER ROADS: A multifaceted approach

Catching up with road safety engineering

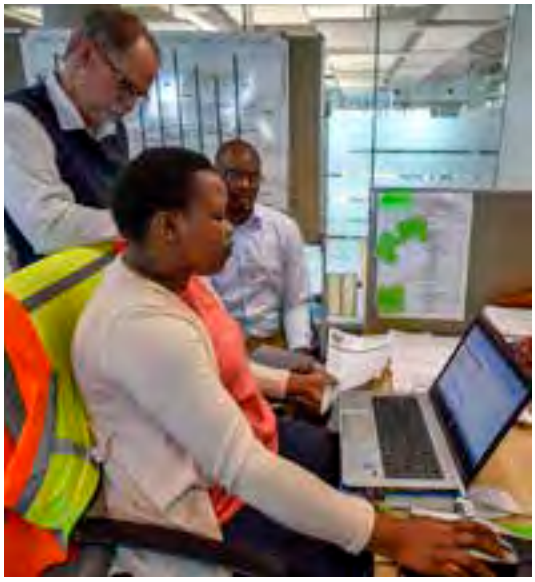
Two years into the development of South Africa's Roads Policy and against a backdrop of an ever-evolving landscape, SANRAL continues to meet its road safety engineering challenges head on.

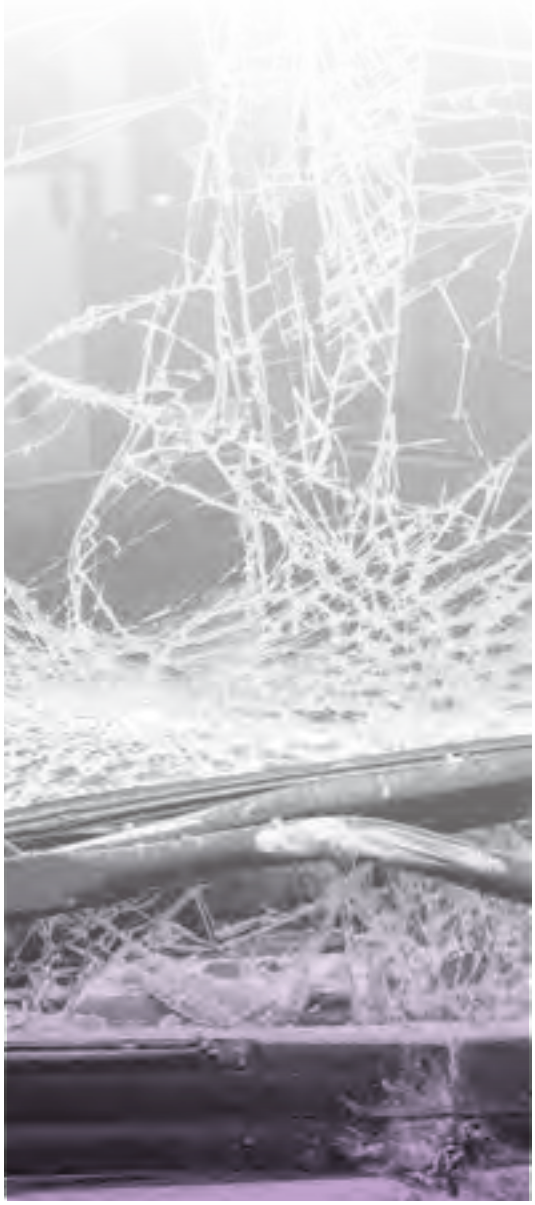
Managing and mitigating risks on our road network is a key deliverable for the Road Safety Engineering Focus Group. The team's task is to identify and implement cost-effective road safety engineering priorities that create a more forgiving road environment and reduce the risk of severe injuries and fatalities when crashes occur.

In the absence of accurate crash data, a risk calculator (Netsafe) has been used in conjunction with the Integrated Transportation Information System (ITIS) to assist in understanding crash patterns and underlying common denominators.

SANRAL developed an ITIS App midway through 2019 and it is primarily used by the Road Incident Management System (RIMS) and Routine Road Maintenance (RRM) teams. It contains a module for detailed crash reporting, informed by critical information as supplied on the Blue Marker location boards (these boards are found every 200m on all national routes). This data will become crucial in how SANRAL designs and manages safer roads in the future.

In response to non-motorised transport (NMT) safety on the national road network, we developed new standard details to deal with lower mobility routes. These are not traditionally associated with engineering design for national roads, but SANRAL puts people at the forefront of its operations and adapts to the evolving landscape that is South Africa's national road network.





SCIENTIFIC RESEARCH WILL PAVE THE WAY FOR SAFER ROADS

The national road network is maintained according to international standards using an ITIS. Proactive planning, design, construction and maintenance are benchmarked against industry best practice to ensure we can hold our own with the best in the world.

Road authorities are moving towards a "Safe System" approach, assessing road networks holistically to ensure engineering standards and a safe environment for all road user groups.

South Africa experiences approximately 832 000 road crashes every year, roughly 2 200 crashes daily. According to the Road Traffic Management Corporation (RTMC) 2018 crash statistics, the 120 major crashes recorded between January and December resulted in 802 fatalities and 1 170 persons sustaining injuries. These statistics underscore just how severe the impact of even a small number of crashes can be, not to mention the resulting economic costs. Refocusing government efforts on serious and fatal crashes will not only save lives but makes for a sound business case for road safety.

The RTMC report notes pedestrians accounted for approximately 35.6% of South African road fatalities in 2018. A sharper focus on pedestrian behaviour and creating a road environment more conducive to pedestrian safety should improve our country's road safety statistics.

The "Safe System" approach rests on four main design elements.

- Safe roads and roadsides that are predictable and forgiving of human error.
- Safe speeds that suit the function and level of safety of the road.
- Safe vehicles that prevent crashes and protect road users, including occupants, pedestrians and cyclists, in the event of a crash.
- Safe road users who are alert and unimpaired and willing to comply with the rules of the road.

4.4.2 Road Safety Education Workshops

During the year SANRAL hosted 124 road safety educational workshops at approximately 79 sites around the country. The workshops were well received.

1 963 teachers attended the train-the-trainer workshops, while 6 428 received resources to equip them to carry out road safety education at their 1 538 respective schools.

554 parents and 238 594 learners benefitted from these workshops.

Road Safety Education Statistics	
Total sites for 2020	75
Total sites including special requests	79
Total number of workshops	124
Total teachers attending workshops	1 963
Total teachers receiving SANRAL material to teach road safety	6 428
Total schools	1 538
Total learners to benefit	238 594
Total parents to benefit	554

SANRAL reaching more learners, teachers, and parents

SANRAL's mandate on road safety goes beyond the design and construction of safer roads. Horizon 2030 stresses road safety as a national priority and secures SANRAL's role in road safety education and awareness.

Road safety education and awareness (RSE) entails the implementation of educational and awareness programmes that will lead to changed attitudes and behaviour among all road users.

SANRAL's strategy, in cooperation with the Department of Basic Education (DBE), includes content development for learners, the training of teachers and educating community members (such as parents) to promote the development and formation of appropriate road user behaviour.

Material for the learners

Curriculum and Policy Statement (CAPS) documents highlight road safety in a practical and useful way, developing learning opportunities in the form of lessons with a road safety theme to suit the respective grade levels.

Critical thinking in the FET Phase

The RSE FET programme stretches over three years and is presented as a countrywide competition. It offers road safety to learners as a real-life situation, challenging them to demonstrate relevant competencies in mathematics and science, while addressing increasing infrastructure needs and developments within their community.

The learners' task is to plan, design and build a scale model of all infrastructure needed for a particular set project. They conduct integrated scientific research and, through the application of mathematics and science, find possible road safety solutions to real-life situations.

Training the Teachers are workshops to equip teachers with knowledge about road safety as a subject and to enable them to implement road safety education aligned to the CAPS.

Engaging the parents

The material and teachers will have little effect if parents are not equally engaged and receptive to road safety education. Parents play an essential role as road safety role models for their children and are primary trainers in road safety skills for their children. SANRAL continues to reach more teachers and parents to be road safety ambassadors in the holistic education of their children.

Effective Incident Response

Road Incident Management Systems (RIMS) exist for national roads and many other roads that support economic development zones and areas of strategic importance to particular provinces. They coordinate the efforts of law enforcement, emergency and health services in responding to incidents. The objective is to ensure fast detection of incidents, rapid response and efficient use of our resources, to save lives and minimise traffic disruption.

Detection, notification, communication and mobilisation are some of the critical components in RIMS.

Swift detection is a critical component, as any obstruction on the roadway creates a hazard for other road users and could potentially cause secondary incidents.

SANRAL is developing an app that allows road users to obtain the contact details of the nearest call centre, log the incident in real-time and thus notify emergency services in rural areas as the incident occurs.

Centralised Communication Centres (CCC) have been established across all provinces to coordinate the response of emergency services. There are 54 CCCs across all provinces in South Africa. All CCCs are being audited to establish standardised procedures and investigate better and faster technology.

A national RIMS policy and operating procedures manual ensures standardised protocols across various RIMS stakeholders and emergency service responders. The Minister of Transport designated SANRAL as the RIMS implementing authority. SANRAL is assisting DoT to expand RIMS into the SADC region by working through relevant committees.

SANRAL supports RIMS in various districts by developing stakeholders at management level and collaborating to provide training to staff members.

SANRAL has developed a RIMS SAQA accredited training course through the Transport SETA. SANRAL offers these training workshops and courses to all emergency services and stakeholders who form part of RIMS.

4.5 ROAD SAFETY INITIATIVES ON CONCESSIONED TOLL ROUTES

TRAC, N3TC and Bakwena contribute to road safety on the national toll routes that they manage. Their approaches differ, but all address the challenges of creating safer roads, modifying the behaviour of road users and responding effectively to road incidents, including crashes.

SAFER ROADS

TRAC

TRAC continued to stage its annual Easter and December Road Safety and Swift Response Campaign which is broken up into two tiers – namely the quick response to events on the road and a road user interactive activation where road users are educated about rest stops, the TRAC helpdesk and TRACAssist.

N3TC

N3TC carried out a number of improvements.

Roadway and roadside furniture improvements.

Enhanced signage and additional road studs in critical zones.

Detailed incident reporting on IRIS information system

Public Private Partnerships with Mpofana Local Authority for enhanced law enforcement in the area.

Operations of CCTV and VMS systems.

Education and training sessions at schools.

Bakwena

Bakwena continued with its Safe to School Project.

Infrastructure issues in Bapong were identified through the Safe to School Project and were followed up by a Wayleave application for pedestrian facilities to North West Public Works.

SAFER ROAD USERS

TRAC

TRAC continued with its popular Schools Road Safety Campaign where primary schools along the route were targeted, featuring TRAC's road safety mascot, Sipho. A theatre production was presented with Sipho as the main star and basic pedestrian (rural) and passenger (urban) road safety rules were taught.

N3TC

IMS and Focus meetings targeting causes of crashes and augmenting intervention measures were held.

Facilitated a number of road safety awareness programmes.

Special Operations hosted included: driver wellness, eye enforcement, alcohol and drug screening and public transport compliance.

N3TC has a 24/7 helpline, 0800 63 4357 and Twitter feed @N3Route. The prime objective of these platforms is to provide information and thus greater safety for road users in respect of traffic patterns, incidents and weather.

N3TC produced 57 audio visual (AV) clips covering a wide range of road safety topics. These are distributed on N3TC's social media platforms.

In addition, N3TC produces a regular digital publication, Mobility, that focuses on topical safety issues (www.n3tcjournals.co.za).

South Africans against Drunk Driving (SADD) is focused on raising awareness of road safety and educating youth in the importance of safe road practices, whether as a pedestrian, cyclist or motorist.

Bakwena

The Safe to School Project included the following activities:

Safe Walks were done with nine schools for Grade 4 learners (1 350 learners) in Bapong and Majakaneng.

As part of the project a group of 12 volunteers assist learners to cross at the pedestrian bridge and R556 road bridge on the N4 during morning and midday peaks.

The Drama for Change Pioneers held 32 road safety shows in 29 schools from Bapong to Dinokana, reaching an estimated 12 000 learners.

Scholar Patrols are supported in Swartruggens and Dinokana.

Drama for Change Project:

The teams performed at 17 schools and at a final event with an estimated audience of 1 500 people.

For Transport Month, Bakwena, in partnership with Active Education, Imperial Logistics, Volvo and Spilltech carried out road safety education among eight primary schools.

Defensive driving awareness was carried out with over 50 school bus drivers and teachers in Dinokana.

SAFER ROAD USERS (Cont.)

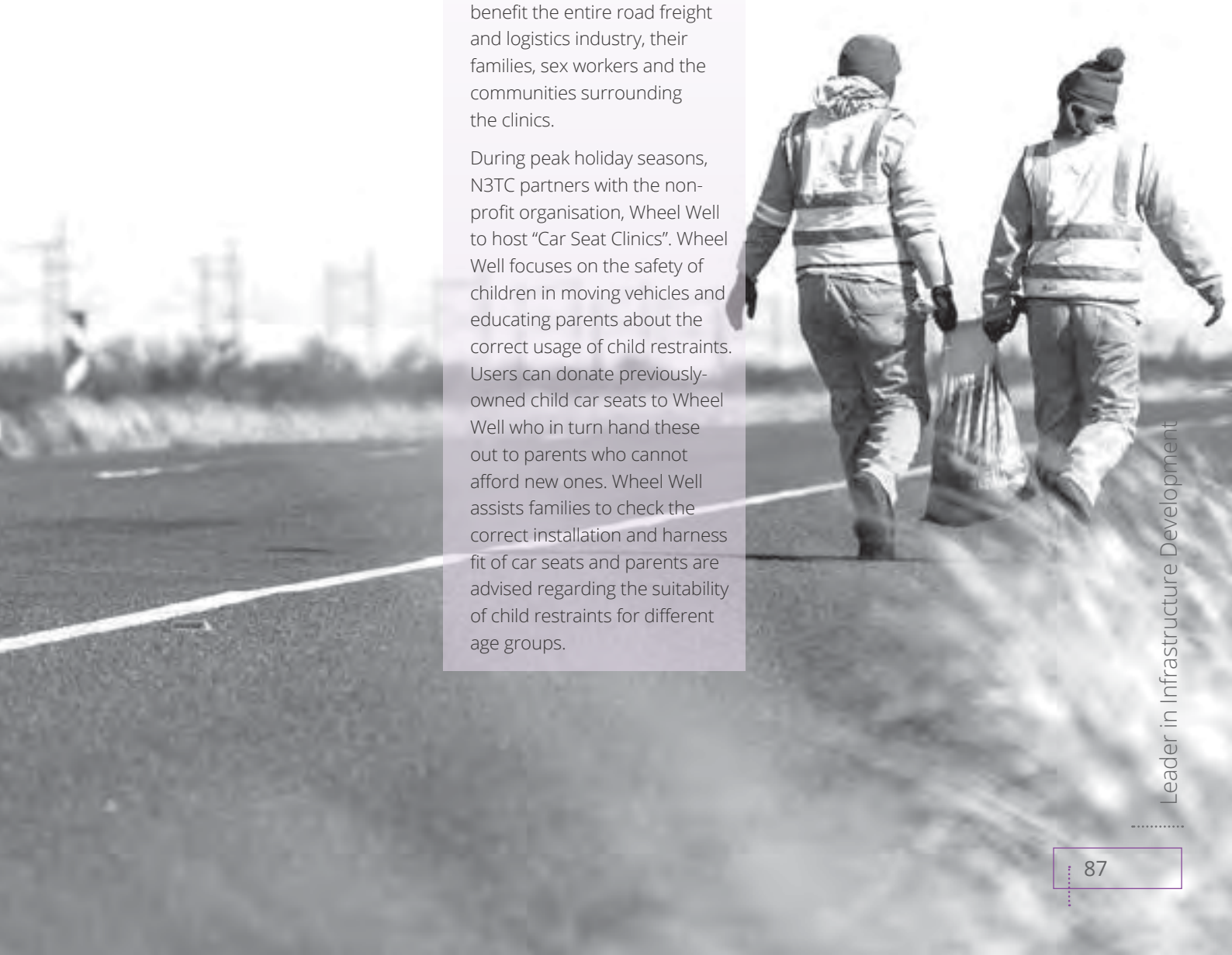
TRAC

N3TC

Five Trucking Wellness Centres, situated along the N3 Toll Route, provide screening tests for blood pressure, blood cholesterol, blood sugar, STIs, malaria and tuberculosis. Once diagnosed, the patients either receive treatment through the organisation or get referrals for further care. The Centres benefit the entire road freight and logistics industry, their families, sex workers and the communities surrounding the clinics.

During peak holiday seasons, N3TC partners with the non-profit organisation, Wheel Well to host "Car Seat Clinics". Wheel Well focuses on the safety of children in moving vehicles and educating parents about the correct usage of child restraints. Users can donate previously-owned child car seats to Wheel Well who in turn hand these out to parents who cannot afford new ones. Wheel Well assists families to check the correct installation and harness fit of car seats and parents are advised regarding the suitability of child restraints for different age groups.

Bakwena



PROMPT AND EFFECTIVE INCIDENT RESPONSE

TRAC

In the period reported TRAC's 24-hour help desk and TRACAssist units responded to:

- 13 826 calls.
- 2 740 accidents.
- 3 557 incidents.
- 590 roadside assistance.
- 6 939 general enquiries.

N3TC

Implementation of RIMS.

Route Control Centre managed effective road safety co-ordination and scene management.

24-hour patrol service in six sections.

Four special response vehicles available for major incidents.

Operate two Emergency Normalisation Vehicles.

Implement a scene safety management system.

Training of services in the management of dangerous goods scenes.

Bakwena

Bakwena has aligned to the national RIMs structure for road incidents in the provinces and district municipalities.

Bakwena runs an Incident Management System in co-operation with SAPS, law enforcement and emergency rescue services.

ADDITIONAL SAFETY MEASURES

TRAC

N3TC

The Community Medical Services team based at Van Reenen's Pass and the Volunteer Rescue Team based at Warden, are highly experienced and competent paramedics, doctors and rescue personnel, who offer medical services over peak traffic periods.

Bakwena

4.6 UNIVERSITY PARTNERSHIPS

SANRAL's partnerships with universities centre on a shared interest in increasing relevant research and postgraduate study in engineering and related fields. We are promoting science and mathematics at school level to ensure a secure flow of talented young people into the engineering professions. The partnerships increase the public visibility of SANRAL, help the Agency meet its demand for engineering professionals and relevant research and contribute to a dynamic engineering sector.

SANRAL has endowed three specialised chairs at universities:

- The SANRAL Chair in Transport Planning at the University of Cape Town (UCT);
- The SANRAL Chair in Pavement Engineering at Stellenbosch University (SU), which has a dual teaching and research function; and
- The SANRAL Chair in Mathematics, Natural Science and Technology Education at the University of the Free State (UFS), which directs its energies at postgraduate research on the teaching of mathematics, science and technology and the training of teachers for these subjects.

University of Cape Town

During the 2019 academic year, the SANRAL Chair at UCT continued to promote transportation-related research in South Africa and train undergraduate and postgraduate students in human capital development in the area of transportation planning and engineering.

The undergraduate civil engineering teaching is a first-year project course in informal settlement upgrading. The fourth-year course is Transportation Engineering. It also offered a geometric and pavement design project on the N7 Clanwilliam upgrade, plus a research project course.

This year, UCT supervised ten PhD students in their dissertations in the field of transportation planning and engineering and supervised 45 research projects.

UCT collaborated on research with:

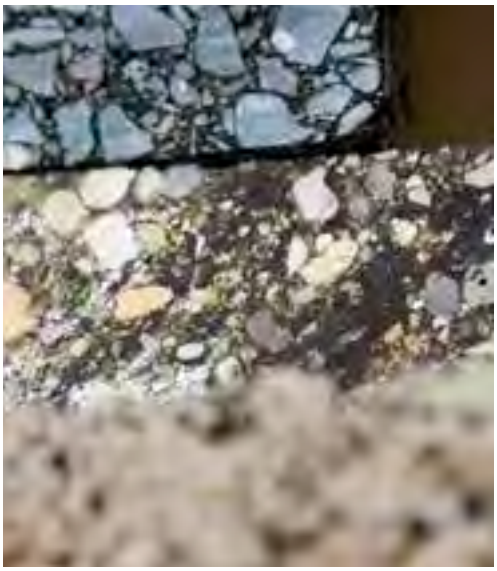
- University of Twente, the Netherlands (together with the City of Cape Town);
- Radboud University, the Netherlands;
- Technion, Israel Institute of Technology;
- University of Leeds, United Kingdom; and
- Sungkyunkwan University, South Korea.

UCT undertook specialist consulting work including with the UK Aid sponsored ReCAP project, among others. This work, as well as contract teaching, is executed to generate funds to pay for student bursaries. The Chair has not taken an ad-hoc salary out of any consulting work.

UCT also collaborated with the South African Road Federation (SARF) on CPD courses in traffic impact assessment.

This year it also stablished a SANRAL Digital Engineering Laboratory at UCT for freeway network and traffic research. The UCT SANRAL Chair was fully endorsed in 2019 with promotion to full professor and graduated its first four PhD students.

UNIVERSITEIT STELLENBOSCH UNIVERSITY



University of Stellenbosch

The postgraduate programme in pavement engineering at Stellenbosch University, under the leadership of the SANRAL Chair, has had yet another successful year of academic development. During the 2019 academic year, four master's degrees and one doctorate were awarded in pavement engineering, while seven new postgraduate students registered for postgraduate studies in this field.

Research carried out under the auspices of the SANRAL Chair in 2019 remains focused on the critical areas of need of the South African roads industry.

The Chair forged strong relationships locally with the CSIR, Sabita, SARF, as well as internationally with the Delft University of Technology in the Netherlands, the University of Parma in Italy, the International Society of Asphalt Pavements and the International Journal of Road Materials and Pavement Design.

Through the generous and visionary support of SANRAL, as well as the generous response of the roads industry in South Africa, the SANRAL Chair in Pavement Engineering continued to thrive in 2019.

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS UV ®

University of the Free State

The SANRAL Chair was established as a strategic intervention to improve science and mathematics education by developing excellence in research and the training of teachers in science and mathematics at the University of the Free State. The SANRAL Chair was explicitly charged with the task of actively developing researchers in science and mathematics education and providing support for quality teaching and learning of science and mathematics in schools.

The work of the chair was organised into five research projects. At the end of 2019, the SANRAL Chair had graduated 28 PhDs and seven master's graduates.

The Department of Basic Education (DBE) adopted our programme, Lesson Study, as its main intervention strategy for fostering change in the teaching of science in schools across all nine provinces.

Building sustainability on the achievements of the past five years will remain one of the main priorities.

Other partnerships

A three-way partnership exists between SANRAL, the CSIR and the University of Pretoria for the establishment and management of an integrated set of national reference and research laboratories for development and testing of materials used in transport and transport infrastructure.

4.7 SCIENCE PROGRAMMES FOR LEARNERS, PARENTS AND TEACHERS

The Agency's investment in improving mathematics and science teaching at school level flows through well-established programmes run by two universities.

Science-for-the-Future is an initiative of the UFS and it has three distinct components, two of which have also been adopted by Nelson Mandela University (NMU).

- **The ICT Laboratory for Science** is geared to the needs of learners in grades 9 – 12 who show promise in mathematics and science. Over the course of two or three years, the programme enables learners to participate in 30 laboratory sessions on the Bloemfontein and QwaQwa campuses of the university.
- **Key Concepts in Science** covers the grades 8 – 9 natural science curriculum and seeks to enhance school teachers' ability to present and explain scientific principles
- **The Family Math and Family Science Programme** seeks to excite interest in mathematics and science among younger school children and build their confidence in studying these subjects. This is done through equipping teachers and through workshops with parents of learners.

Number of learners and students in the ICT Laboratory for Science programme

	Grade 7 (Achievers)	Career (Mentoring)	Grade 9 (selected)	Grade 9 (selected)	Grade 9 (selected)	Grade 9 (selected)	Total (selected learners)
Bloemfontein Campus	20	24	0	64	57	53	218
QwaQwa Campus	0	0	24	18	18	0	60
Total	20	24	24	82	75	53	278

Participants who benefited from Family Math and Family Science Programme

Total participants	Teachers	Learners	Parents	Student teachers
35 515	542	21 433	12 452	1 069

NELSON MANDELA UNIVERSITY

STEM in ACTION Program

This program serves to promote and develop physical science and mathematics skills of Grade 10 – 12 learners in selected schools in the Nelson Mandela Bay Municipality (NMBM). Ultimately, it aims to increase the number of learners qualifying to study towards a degree in science and technology by:

- increasing the number of learners choosing physical science as a subject;
- increasing the number of learners achieving good enough grades to meet the requirements for studies in science and engineering; and
- exposing learners to careers in the fields of science, technology, engineering and mathematics.

Apart from encouraging physical science and mathematics, the objectives of STEM in ACTION included:

- empowering educators to improve the quality of physical science education and therefore offering a sustainable solution for the poor results performance in the Grade 12 National Senior Certificate (NSC) exams; and
- developing human capital involved with the program to be self-sustaining and have the skills to become employed.

STEM in ACTION introduced two new activities to promote critical thinking and problem-solving skills among learners. STEM Talks, a career exploration session presented to learners and parents, was continued during 2019. STEM Talks were presented at night, and all stakeholders—parents, learners and educators of all the STEM in ACTION projects—were invited.

The programme focused on several activities.

- The Getting Ahead in Technology and Engineering (GATE) project increased its footprint to 80 Grade 10 learners and largely maintained the targeted number of 40 each for Grades 11 and 12. Attendance was high, with an average between 81% for Grade 11 and 93% for Grade 12. (One learner on GATE achieved a final mark of 96%.)
- Several career exploration opportunities were created for Selected Learner Project (SLP) and GATE learners.
- A number of new Selected School Project (SSP) schools were added.
- Highly successful recruitment of new learners for 2020.
- Grade 3 Family Math and Grade 8 Key Concepts were implemented.

The programme achieved most of the Business Plan 2019 targets, and learner numbers increased from 2 295 in 2018 to 2 579 in 2019. Expenditure to implement the business plan for 2019 amounted to R4 182 992.33 and was within the budget.

4.8 CONCESSIONAIRES' SUPPORT FOR EDUCATION, HEALTH AND SOCIAL DEVELOPMENT

Bakwena
N1N4 toll

Education

Bakwena is involved in communities most at risk along the N1/N4 Corridor. The following activities were carried out during the financial year:

239 learners and teachers acquired knowledge, skills and self-confidence to provide First Aid at different levels in 19 schools along the N4. The training partner is the South African Red Cross Society (SARCS).

A further 270 learners from 17 schools were mentored in the process of self-realisation and active citizenry through Drama and Peer Education.

Through Bakwena's AIDS awareness programme in Hammanskraal, 8 500 learners were reached.

Bakwena runs a Functional School programme in five schools of which three are in Hammanskraal, one in Moedwil and one in Mooinooi. Learners are empowered through life orientation and career orientation programmes.

Health

2 964 learners and 400 community members were screened for vision and hearing. Of this amount, 990 learners were referred for hearing problems and 505 learners were referred for eye problems.

Bakwena reached 3 500 community beneficiaries through an Aids awareness and screening programme.

4 500 secondary school learners and community members were educated on breast, prostate and testicle cancer and 720 breast examinations and PSA tests were conducted while 20 mammograms were performed.

Community/Social Development

Eight community volunteer teams in Hammanskraal supported three teams in the Bapong, Mooinooi, Rustenburg, Swartruggens and Groot Marico areas. There are 140 active members in these teams. Thirty two young people were empowered in drama and peer education and 270 learners were mentored and participated in outreach programmes.

Thirty two community members undertook disaster management and restoring family links training.

N4 TOLL ROUTE TRAC
TRANS AFRICAN CONCESSIONS

Education

Bursaries

A bursary was awarded to a BTech student working on the Reducing Roadkill Project, through the Endangered Wildlife Trust (EWT).

Two high school children were awarded scholarships through the Innibos Meridian Educational Trust Fund.

Two students received bursaries and are studying at the University of Pretoria. Fifteen received bursaries to do their learners and drivers licences.

Learnerships

A number of learnerships were awarded for the following:

- Artisan electrician.
- End-user Computer (NQF 3) for a deaf learner.

E-learning Project

Through a partnership between TRAC and Ligbron E-Learning, TRAC's investment provided for nine schools along the N4:

- Equipped 23 maths and science classrooms with computers.
- 828 Matrics benefited from these investments and 8 260 students have access to the system.

Penreach Asifundze Literacy and Numeracy Programme

Four primary schools in the Lowveld benefited from this programme, further benefitting 1 916 learners.

48 reading camps were established in three communities and 740 children benefited from this after-school initiative.

46 teachers are to be trained to support this initiative, with an estimated gain of 47% in literacy skills for children in the programme.

Health

TRAC supports health and welfare initiatives and awareness programmes within communities and provides the necessary training to health care workers to support their local communities.

- KuPhila Clinic – Financial and administrative support of a community clinic.
- Enterprise Development project of gym and health awareness programme.

Community/Social Development

Thanda Primary

This school in Nkomazi is where TRAC has achieved much success in terms of social development. The non-fee-paying school was initially designed for 120 children but eventually found itself catering for hundreds more. It currently accommodates 880 pupils. When the institution approached TRAC for assistance, it only had four pit-toilets and no kitchen. TRAC embarked on a three-year upgrading project at the school and in February 2020, Thanda Primary boasted six new classrooms, an ablution block, a kitchen and seating area and a Foundation Phase classroom. The community impact has been extremely positive and has resulted in the growth and development of the people living in the area, with a focus on education, skills development and enterprise development. Additional projects at the school will include the continuation of the Penreach Literacy and Maths Programme, Early Childhood Development Centre, E-learning installation, school and community sports development and adult education programmes.

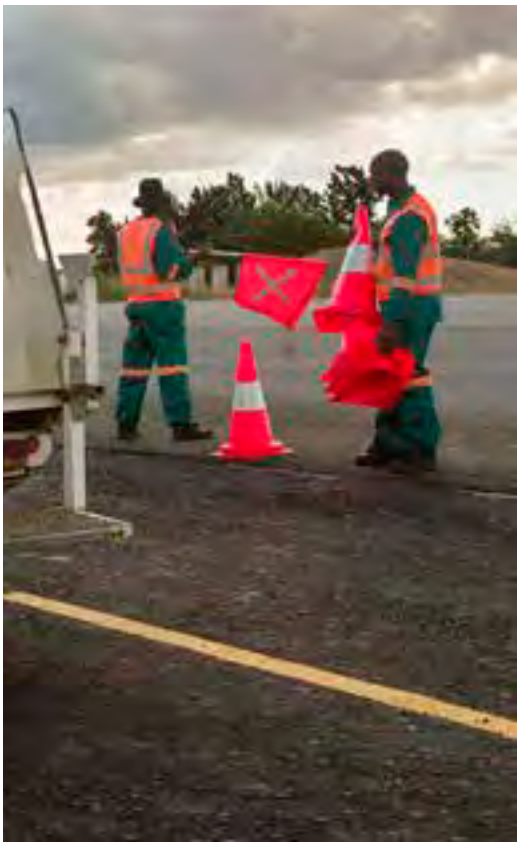
SMME Development

TRAC offers major support to SMMEs in terms of Routine Road Maintenance contracts valued at approximately R13m per annum.

Mozambique

TRAC is a multi-national concession toll project that supports education projects in Mozambique and focuses strongly on basic education. Currently schools are assisted in:

- Escola Primaria do Lingamo
  Major upgrades and renovations took place at this school, including the building of five additional classrooms.
- Escola Primária Completa do Trevo
  Major upgrades and renovations included building male and female ablution facilities for students.
- Escola Secundária 4 de Outubro
  Donated IT equipment and 12 computers.
- Escola Secundária da Moamba
  TRAC gave top performing learners bicycles and donated learning material and stationery to the school.



N3TC

N3TC's extensive Touching Lives programme is to be found at www.n3tcjournals.co.za. Examples of its involvement in education, health and social and economic development include:

Education

- N3TC's tertiary bursary programme for 2019 had 11 university students, one of whom is a member of staff studying towards an MBA. In addition, N3TC provided learnerships to four unemployed youth with disabilities, with the objective of achieving Business Practice NQF Level 2 qualifications.
- Michaelhouse Community Partnership Trust Eduhelpers Programme enabled seven previously unemployed educators to have an income and an opportunity to gain first-hand teaching experience.
- PROTEC Pmb has consistently attained excellent Grade 12 results in Mathematics, Physical and Life Sciences, English and Life Orientation for virtually its entire history of 30 years. Founded in March 1990, it is addressing the pressing need for quality enrichment education for children who are academically gifted in mathematics who live in Pietermaritzburg and the KZN Midlands. It is the only enrichment education option for poor families in this region.

Health

- The Sunfield Home Fortuna, near the N3 Toll Route in Grootvlei, Mpumalanga, houses more than 80 people with physical and mental disabilities and N3TC is honoured to have a long-standing partnership with it.
- N3TC partnered with the Khanyisile Trust to care for more than 200 families in the Van Reenen and the Sand River areas.

Community/Social Development

- The Topsy Foundation's holistic Early Childhood Development (ECD) and support programme involves improving the health, nutrition, education and overall wellbeing of disadvantaged children by providing quality services to children up to five years of age. Topsy is partnering with 29 ECD centres and reaches 2 000 children through its Play and Learn Centre, which is visited, on average, by 45 children daily.
- N3TC funds the Free State Care in Action After School Care Centre, providing monthly food parcels, school uniforms, stationery, school bags and other items. The Centre gives underprivileged children a secure haven after school where they can enjoy a healthy meal and have access to assistance with schoolwork and other needs.

5. NATURAL CAPITAL

Roads and the transportation that uses them are vital to the country's economy, yet the construction of such infrastructure impacts the environment. SANRAL must balance the needs of economic development and growth with the economic, social and governance principles that exist to mitigate these impacts through consultation, collaboration and innovation.

Workshops and discussions among several stakeholders explored issues such as effective and efficient use of resources, including water and energy-saving programmes, establishing guidelines on the use of reclaimed concrete and the exploration of the use of alternative materials, such as waste tyres and glass.

5.1 INTRODUCTION

SANRAL, in partnership with the Department of Transport (DoT), brought interested parties together at Smarter Mobility Africa Summit to explore the investment in and development of alternative transport, such as electric vehicles.

We cannot ignore the fact that the transport sector is the second-largest generator of greenhouse gas emissions, contributing significantly to climate change and other environmental impacts. We have, therefore, joined with the DoT in its Green Transport Strategy to address current and future transport demands that employ sustainable development principles.

Horizon 2030

Through Horizon 2030, SANRAL emphasises resource efficiency, the pursuit of which helps the organisation to achieve and track multiple objectives, including compliance, lower operational risk, improved reputation, innovation and climate resilience. These objectives are also in line with relevant government initiatives, specifically the National Strategy for Sustainable Development (NSSD) and the Green Transport Strategy (GTS). SANRAL continues to pursue these objectives and to demonstrate its commitment to environmental sustainability and resource efficiency.

5.2 RECYCLING RESOURCES

SANRAL initiated a study tour and workshop, in collaboration with consulting engineers, industry experts and academics, to look at optimising the use of recycled/reclaimed materials in construction projects, with a specific focus on the upcoming N3 upgrades.

The materials in focus included concrete, waste tyre, asphalt, and metals.

Workgroups were formed to drive different elements of resource efficiency, including water and energy-saving, the adoption of guidelines on the use of reclaimed concrete and exploration of the use of alternative materials such as waste tyres and glass.

5.3 SANRAL'S SMARTER MOBILITY EXPERIENCE

SANRAL took part in the Smarter Mobility Africa Summit and Electric Vehicle Road Trip hosted by the Department of Transport (DoT) in a unique partnership with Generation.e, aimed at bringing stakeholders together to showcase and inspire incremental investment in and transition to smarter mobility.

SANRAL participated in the initiative as the overall benefits flowing from it would satisfy several elements of South Africa's GTS and for the implementation of SANRAL's corporate strategy, Horizon 2030, including smart mobility, stakeholders and the transition to lower-carbon alternatives.

SANRAL shared with the audience its initiatives including the benefits of the e-tag, our world-class road infrastructure, exploring the practicalities of electric charging stations as a potential revenue generation opportunity, functionalities of the SANRAL App and learnt about other current and future developments and commitments by regulators, car manufacturers, entrepreneurs and para-transit taxi operators.

South Africa's Green Transport Strategy 2018-2050

Officially launched in 2019 by the Department of Transport (DoT), the Green Transport Strategy (GTS) is a response to the unenviable position of the transport sector as the second-biggest emitter of greenhouse gases in South Africa (after energy), contributing significantly to climate change and other environmental impacts. The strategy is aimed at:

- mitigating the negative impacts of the transport sector on the environment;
- addressing current and future transport demands;
- employing sustainable development principles; and
- ensuring a just transition to a low-carbon and green economy.

5.4 SUSTAINABILITY RATING TOOL (SuRF)

SANRAL, in partnership with the DoT and stakeholders represented on the Sustainable Roads Forum developed the first draft of an industry-wide South African sustainable roads rating system commonly referred as the "SuRF" Tool, with the assistance of the engineering firm Royal HaskoningDHV.

Unlike similar tools in use, SuRF includes a unique focus on the issues of the socio-economic impacts of road projects in the context of South Africa. The tool is currently being fine-tuned by SANRAL to be more practical and user-friendly.

Sustainable Roads Rating System

The Sustainable Roads Rating System for road infrastructure delivery (SuRF Tool)

SANRAL in partnership with the Department of Transport (DoT) and stakeholders represented on the Sustainable Roads Forum , plans to adopt a rating system for road projects which promotes the use of sustainable best-practices in the planning, design and construction of roads.

The SuRF rating tool—a first for South Africa—allows road authorities to set sustainability intervention targets for their projects and to start measuring and reporting them in a clear, transparent and structured manner.

The tool is being piloted on the N3 corridor upgrade between Durban and Pietermaritzburg in KwaZulu-Natal. It provides a list of design and construction interventions, guidance for implementation and a unified method of reporting. It also introduces a carbon footprint measurement and attempts to start quantifying the reduction in the carbon footprint resulting from the interventions.

Similar tools in use typically weigh scores based on the biophysical aspects of sustainability. The SuRF rating tool, however, provides an additional focus on the socio-economic impact of road projects in the context of South Africa's inequality, unemployment challenges, skills development and history of restricted movement.

Attempts in the past to set up rating systems for the broader infrastructure industry such as roads, dams, buildings, power plants and toll systems, took a one-size-fits-all approach.

The roads industry in South Africa, therefore, started pursuing a rating system which would be entirely specific to roads. The engineering and project management consultancy company Royal HaskoningDHV undertook the earliest stages in developing a new localised rating system with support from SANRAL. SANRAL is piloting and refining the tool to ensure ease of use and consistency in interpretation before it is formally adopted.

Countries such as New Zealand, the USA and Australia have had a rating system for many years, because sustainability in infrastructure provisions is enshrined in law. Their construction and consulting companies use the sustainability rating system as a business strategy, giving them a competitive advantage over rivals.

Now South Africa is catching up. The SuRF rating tool is set up so that it capacitates users in respect of sustainability considerations through a menu of best practices for South African roads, initially for self-assessment, allowing a transition towards best-practices in a uniform and transparent manner. These are then used for progress reporting purposes and final scoring on completion of the project phases.

The credits generally fall within the following categories:

- Environmental Impacts
- Climate Change considerations
- Pavement Design
- Materials and Resources
- Energy and Atmosphere
- Community, Skills and SMME Development
- Access and Equity
- Innovation and Design

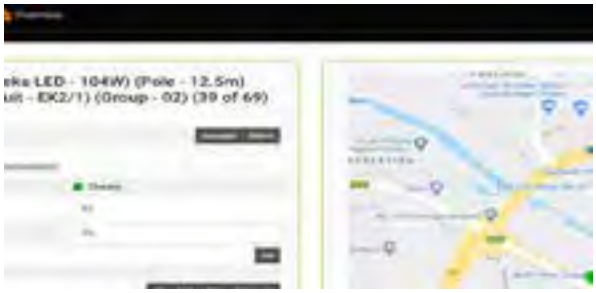
Summary of the SuRF Tool

Item	Category	Goal	Sub-Categories	Points
1	Environmental Impacts	Promote environmental best practices related to land use, habitat, water and other ecological resources	14	55
2	Pavement Design Technologies	To optomise sustainable designs	4	7
3	Materials and Resources	To optomise usage/re-usage of recycled materials and to minimise material transportation distances	7	24
4	Energy and Atmosphere	To minimise energy consumption and GHG emissions	11	25
5	Community Impacts	Promote best practices for improved quality of life including safety, human health, accessibility and social justice	10	39
6	Access and Equality	Social sustainability through accessibility and equality	8	19
7	Innovation and Design Process	To recognise innovation and exemplary efforts made to foster sustainable pavement designs	2	4
8	Climate Change	Reduce human and natural system vulnerability by increasing adaptive capacity in the project and system	2	3
			58	176

Conservation on major projects

The table below summarises some important conservation activities undertaken as part of construction projects during 2019/20.

The prolonged drought in parts of the country spurred efforts by contractors to apply more resource-efficient construction methods.



Screenshot of the dashboard from the lighting management system

Intervention	Benefits
Electronic Anti-theft Security Monitoring System incorporating a Lighting Management System (LMS)—pilot projects at Umgeni I/C and Umdloti to Tongaat Plaza	Energy saving of about 40% through LED light fittings and remote control of light intensity for one or more light fittings at 25%, 50%, 75%, or 100%, or to be completely switched off.

Environmental Impact Assessments

Maintenance and monitoring continue to ensure the health of the thousands of plants rescued from Mthentu and Msikaba Bridge haul roads and construction sites and on the baobabs of Musina Ring Road.

Project name	Environmental Approvals Received
Various sections of the N2 and N3 upgrades	Environmental authorisations for the road sections and permits for protected plant species and natural forests were issued.

5.5 STATUTORY DEVELOPMENTS

No significant changes affecting SANRAL occurred during the financial year. However, on 11 March, the World Health Organization classified COVID-19 as a pandemic. Following related developments in our country, the government declared a National State of Disaster relating to COVID-19 in terms of section 27(1) of the Disaster Management Act, 2002, which came into effect at midnight on Thursday, 26 March 2020.

This affected projects in respect of regulated periods contemplated under environmental legislation, primarily the Minerals and Petroleum Resources Development Act 2002 (Act No. 28 of 2002) (MPRDA); the National Water Act, 1998 (Act No. 36 of 1998); the National Environmental Management Act, 107 of 1998 (NEMA) and specific environmental management acts regulating air quality and waste among others, as well as associated regulations including:

- processing applications for environmental authorisations;
- public participation processes required in respect of applications for authorisation and amendments; and
- the periods within which to submit appeals and objections under the NEMA and the National Appeal Regulations.

Government notices by the respective ministers would subsequently confirm all of the above.

In March 2020, the Environmental Team participated in a webinar with external legal experts and other environmental practitioners, to review applicable environmental laws, the powers of Environmental Management Inspectors and the tools they employ in enforcing compliance. The session also included practical steps in preparing for routine and ad-hoc inspections, as well as administrative notices issued by the authorities.

5.6 LIAISON WITH REGULATORY AUTHORITIES

SANRAL keeps the Department of Environment, Forestry and Fisheries (DEFF) apprised on significant projects, such as the N3 upgrades and the N2 Wild Coast project. We continued with efforts to build relationships with DEFF and other regulatory authorities regarding natural forests, protected trees and attempts to streamline the environmental regulation of mining activities.

The Department of Water and Sanitation (DWS) conducted a governance review focusing on SANRAL's monitoring and self-regulation. Final feedback on the review is expected later in 2020.

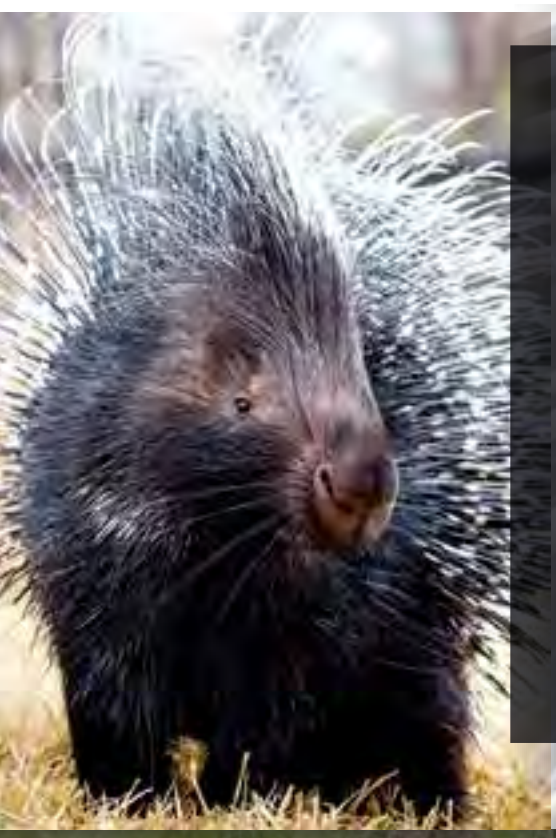
Aloe Simii Relocation and Propagation Trials

As reported in 2018/19, the environmental authorisation for the proposed construction of Road P166 in Mbombela is conditional on relocation and propagation trials for Aloe Simii species affected by the White River stretch of the proposed road, which must occur before construction.

This is a three-year research project undertaken by SANRAL in collaboration with the South African National Botanical Institute, Mbombela Metropolitan Municipality and the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs and a specialist consultant.

A total of 185 plants have been planted over three planting events in October 2019, February and March 2020 at a site selected at the Uplands School, using plants that originated from surrounding populations. A total of 125 plants have survived and continue to grow successfully.

Unfortunately, none of the (±1 000) seeds collected in 2019 germinated successfully, possibly because collection occurred too late in the season and insects had already compromised the seeds by eating into them. Future planting will be influenced by seed germination and growth rates and possible DNA analysis, which may provide scientific evidence to allow cross-planting between populations.



Other interesting observations thus far: Porcupines digging in the plots pose a danger to younger, smaller plants, which are likely to be more palatable Seedlings in shared trays tend to be stunted; seedlings need to be planted out into individual packets in order to grow a bigger plant.

5.7 CONCESSIONAIRES' ENVIRONMENTAL INITIATIVES

TRAC

Tree of remembrance:
TRAC advises to plant a tree rather than place a cross on the side of the road in memory of the deceased.

Alien Eradication with LEFPA:
TRAC partnered with the Lowveld and Escarpment Fire Protection Association's (LEFPA) firefighting teams during the off season to assist with alien eradication along the route. LEFPA is based in Mbombela.

Research project with Endangered Wildlife Trust:
We work on the organisation's Wildlife and Roads Project which is an ongoing database management system whereby information on the number and type of wildlife killed on the road is collected daily by TRAC's patrol teams.

This project gave rise to skills training for TRAC's patrol teams who have all attended workshops on data collection, species identification and snake handling skills. The provision of such data makes it possible to make recommendations relating to road design and management.

Annual studies included:
- Water testing
- Vegetation assessments
- Assessments of alien plants
- Noise studies

N3TC

Extensive training programme carried out for construction projects.

Planting of vetiver grass and other types of grass seeds to stabilise soil and protect it against erosion.

Implementing **erosion control measures** such as gabions, earth berms and grouted stone pitching.

Placing of topsoil and applying fertiliser to certain slopes.

Reducing the spread of alien vegetation by eradicating, controlling and managing the growth.

Pro-active fire break implementation measures such as disking/tilling and steep slope management.

Obtained authorisation under a GA from Department of Water and Sanitation for **construction of a bridge** over the Vaal River.

Important **conservation projects** are conducted along the N3 Toll Route by the Endangered Wildlife Trust (cranes and sungazers), Birdlife South Africa (blue swallows) and the KZN Crane Foundation. With the support of N3TC, these organisations are able to assist communities and farmers to develop and implement management recommendations for species, wetlands, grasslands and rivers within the catchment areas.

EWT continued to provide **scientific advice** on ways to mitigate the negative environmental impact of wildlife-vehicle-collisions. (WVC).

Route patrollers assist with data records to provide a better understanding of the species most at risk along the route.

Bakwena

Eco-Schools Projects:
Bakwena sponsored the implementation of the WESSA Eco-Schools Programme in Kgetlengrivier and Ramotshere Moiloa to improve environmental management of schools.

Guardians of the Future Project:
The Endangered Wildlife Trust piloted their GOTF project in schools in Hammanskraal

Conservation Education Projects:
Bakwena supported the Magaliesberg Biosphere NPO and sponsored the conservation of carnivores and other wildlife.

Bakwena
N1N4 toll

Additional environmental initiatives

WESSA Kgetleng and Ramotshere Moiloa:
Eco-schools

In this Eco-school programme on the N4 West, 57 educators and 3 361 learners took part in the programme and nine schools were awarded a Green Flag.

Endangered Wildlife Trust:
Guardians of the Future

This project was piloted by EWT in six schools in Hammanskraal. Environmental education material was adapted to suit the requirements of the Guardians of the Future Project. A suite of curriculum boosters was also developed to be replicated by the teachers.

EWT:
Carnivore Conservation Project

Six livestock guard dogs were placed along the N4 route and livestock farmers educated in their use. The communities in Phokeng and Madikwe were trained on the conservation of carnivores.

Protecting wildlife on roads

Approximately 56 reports were submitted by Bakwena Patrollers in 2019.

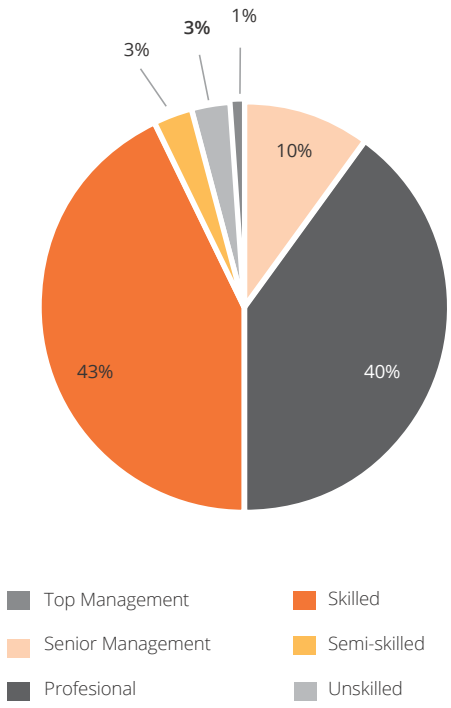
6. HUMAN CAPITAL

The bulk of SANRAL's work falls into the realm of planning, specialised contracting and project management, all of which are informed by professional knowledge of road systems management and road design and construction. Operational work is undertaken mainly by contracted engineering and construction companies.

6.1 PROFILE OF THE WORKFORCE

The composition of the Agency's staff establishment features a large number of senior managers and seasoned professionals. Senior managers, experienced professionals and middle managers account for 50% of the total number of employees.

Employees by occupational category



In the face of fierce competition for engineering skills, SANRAL seeks to attract and retain talent through the right working conditions, skilled human resources management and growing its talent pool. It grows talent through a system of study grants at school and university level and at its Technical Excellence Academy for young engineering graduates.

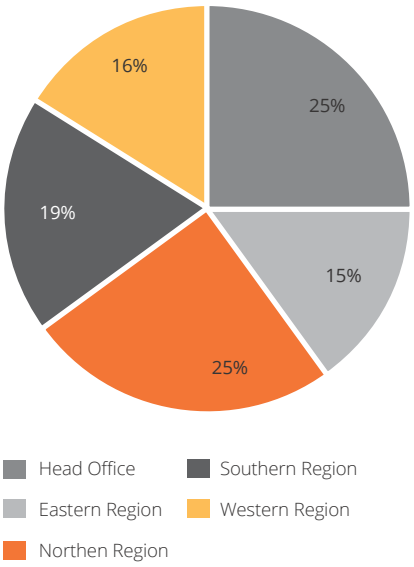
The approach has yielded results. Not only did SANRAL have a staff turnover rate of just 7.06% for 2019/20, but it has made progress towards building diversity in a sector that was almost exclusively managed by white male engineering professionals just a decade or so ago.

The quality of SANRAL's human resources management is attested to by its recognition as a Top Employer for the tenth year running by the international Top Employers Institute and its certification across all 13 standards by the South African Board of People Practices.

6.2 GROWTH AND DIVERSITY

The staff establishment of SANRAL has increased substantially, with 4.26% growth in this reporting year against 6.82% in the previous year. The total number of employees as of 31 March 2020 was 441.

Distribution of employees across offices



An analysis of the representation of women and black employees by occupational category, reveals that the representation of both these groups has shown an improvement at both senior management and professional level. However, women have not achieved parity in the top management and senior management categories.

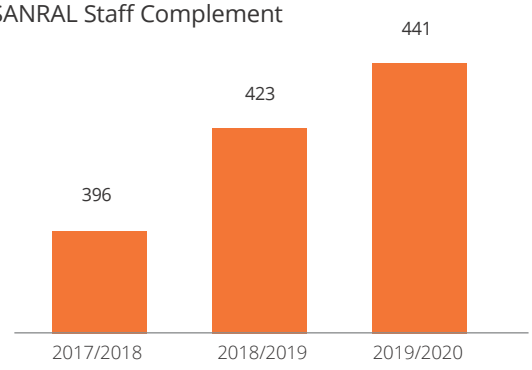
This situation links to the broader question of diversity among professionals in the engineering and road transport sectors. Appropriate professional qualifications are non-negotiable for many positions within SANRAL. The Agency, therefore, seeks to promote the entry of women and black students into these professions through its scholarship and bursary programmes.

The growth of the organisation has facilitated the creation of a more diverse body of employees. Overall, appointments made during 2019/20 brought SANRAL closer to the goal of an establishment that approximates the composition of the general population.

- By the end of the year, 80.95% of employees were black, with African staff members comprising 59.86% of the total establishment.
- Female employees fractionally outnumbered male employees by 3.4%.

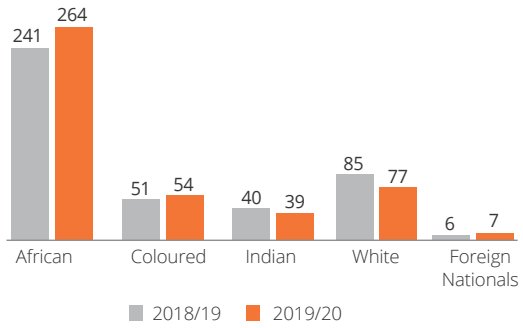
Growth in SANRAL staffing

SANRAL Staff Complement

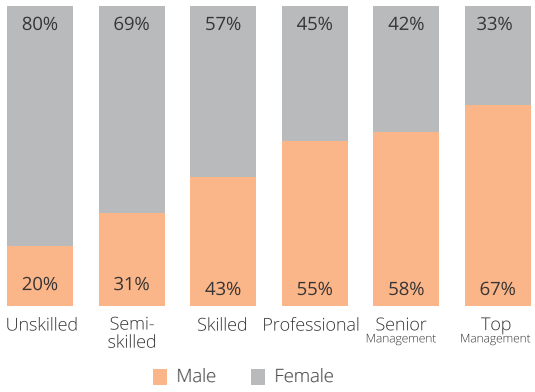


Distribution of employees by population group

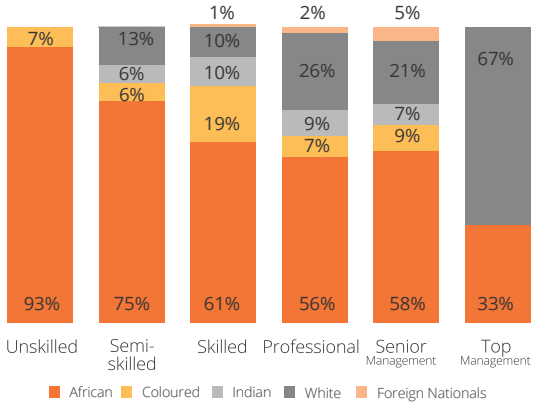
Annual Comparison



Male: female ratio in main occupational categories



Breakdown of main occupational categories by population group



6.3 BUILDING THE ENGINEERING PIPELINE

Employee development

SANRAL encourages the development of knowledge and skills of employees at all levels throughout their careers. Avenues for personal growth range from on-the-job learning, to e-learning, participation in short courses and workshops and study for diplomas and degrees at undergraduate and postgraduate levels.

Internal bursary recipients 2019/20

SANRAL has focused on developing an internal professional corporate structure at the head office over the past three years.

The internal bursary programme, in which all employees can participate, has supported the professional development of newly appointed staff. The investment of R3 154 155.76 in the training of 133 employees during the year included fields such as accounting, social sciences, project management, general management, human resources management and engineering.

A total of 106 employees, including 27 new applicants, were awarded bursaries for tertiary studies during 2019/20.

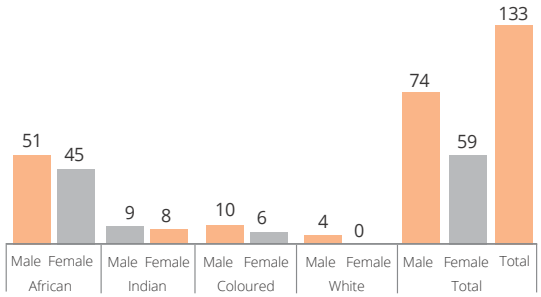
Growth in internal bursaries

2017/18 – 72 bursaries

2018/19 – 107 bursaries

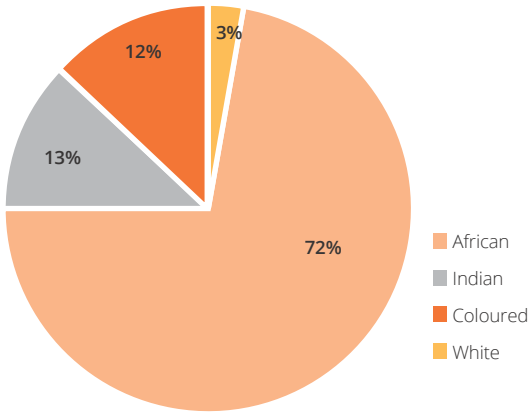
2019/20 – 133 bursaries

Growth in internal bursaries

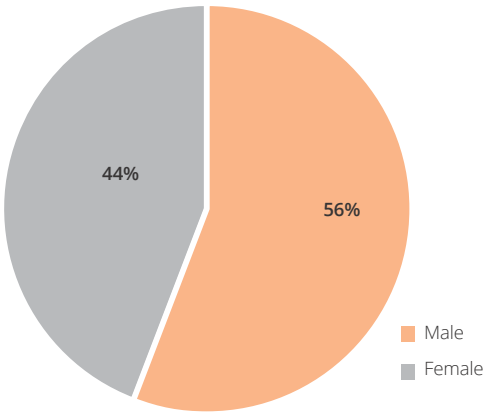


Black employees constituted a high proportion of internal bursary recipients.

2019/20 internal bursary recipients by population group



2019/20 internal bursary recipients by gender

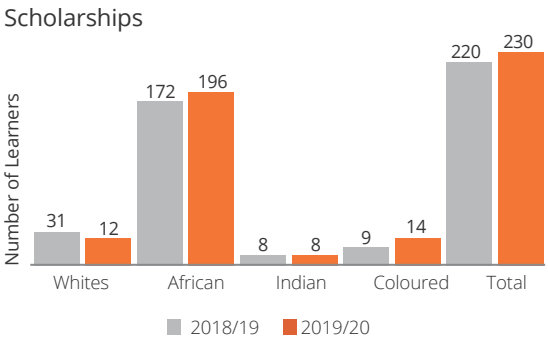


Scholarships and external bursaries

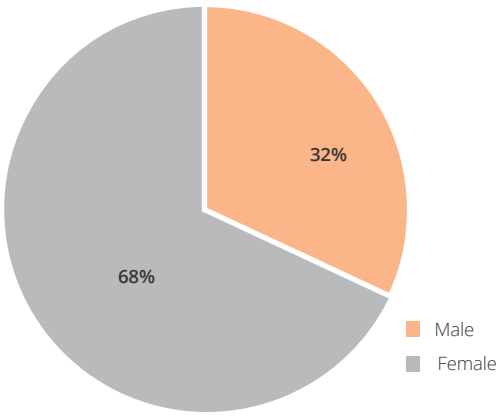
Scholarships

In 2019/20, scholarships were awarded to 230 learners, 68% of whom were girls. The annual number of scholarships has varied only slightly in recent years, but the amount invested has increased considerably and amounted to R6 711 503.14 in 2019/20.

Scholarships awarded in 2019/20 and 2018/19 by population group



Scholarships awarded in 2019/20 by gender of recipients



6.4 ENHANCING SANRAL'S TRANSFORMATION INITIATIVES

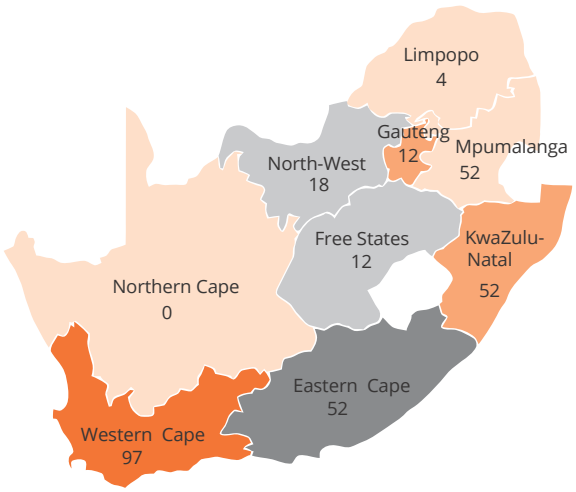
Considering Horizon 2030 and the Transformation Policy, SANRAL is shifting its focus to areas where the need is rife. In pursuing a more inclusive and attractive scholarship programme, SANRAL started piloting a new dispensation on learner funding, targeting learners from disadvantaged areas to provide them with opportunities at a privileged school. This dispensation is paving the way for scholars to gain access to better education, extensive resources and access to information for their future growth. This more robust way of creating real opportunities for the young is taking off and we are excited to be piloting this approach in KZN.

Currently, we have targeted five learners from the rural area of Kwambonambi. The scholars are in grade 11 and 12 and were taken out of their rural environment, to a school where resources to empower and hone their capabilities are available. The learners are given supplementary mathematics, English and physical science classes through a provider identified as an enterprise development opportunity. The learners are given additional tools to cope with the change in environment and a chance to thrive in their new setting. Close monitoring of progress needs to be done to establish the dynamics and viability of such an initiative.

Outcomes of this pilot project

Two of the grade 12 learners who formed part of this cohort progressed exceptionally well and passed Grade 12 at the end of 2019. One scholar obtained above 70% for mathematics and physical science, gaining acceptance at the University of Pretoria to study mechanical engineering in 2020.

Scholarship recipients per province



Scholarship Recipients

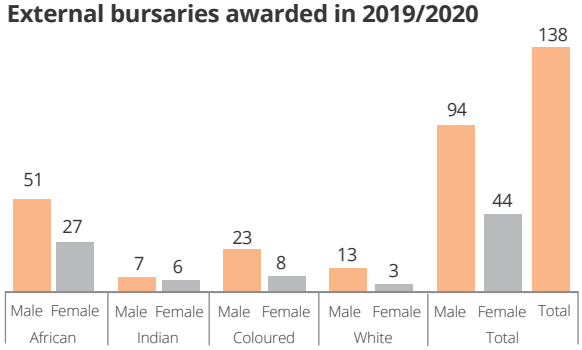
Province	No of learners	No of schools
Gauteng	12	12
Limpopo	4	3
KZN	34	12
Western Cape	97	6
Northern Cape	0	0
Free State	12	8
North West	18	3
Eastern Cape	52	25
Mpumalanga	1	1
Total	230	70

External bursaries

SANRAL aims to live up to its ideal to:

- contribute to the development of human capital in South Africa;
- realise its potential; and
- support deserving qualifying students in the fields of transportation infrastructure, specifically civil engineering and its related professions in the built environment, smart technologies and other professions related to the core business of SANRAL

External bursaries awarded in 2019/2020

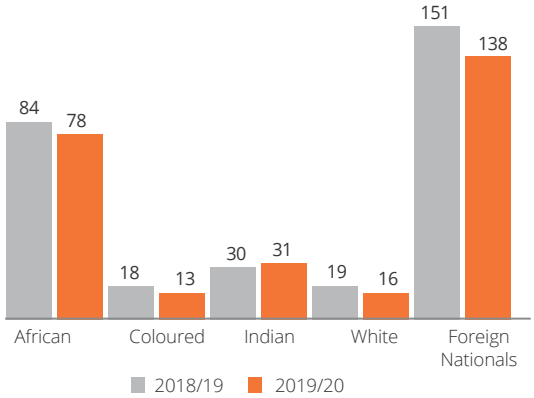


The 2019/2020 financial year shows the SANRAL external bursary sponsorship of 138 students across seven different tertiary institutions in South Africa, with a total committed expenditure of R16 420 537.26.

The sponsored students comprised postgraduate and undergraduate students in studies ranging between B Eng, B Sc, B Eng Tech, B Tech, M Eng and postgraduate diplomas.

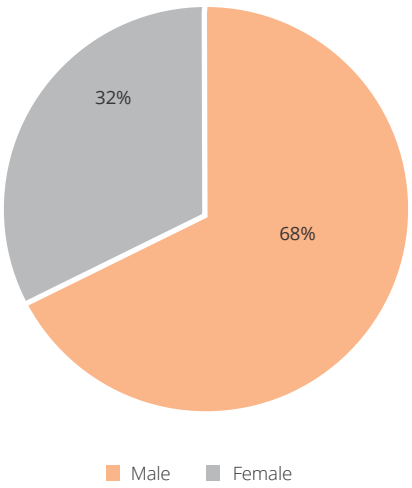
One of the goals of the intake was to increase the number of candidates that meet targets as set out in SANRAL's Employment Equity Plan and in doing so, have a group of students reflective of the South African demographic. This strategic approach will ultimately influence and transform the industry to become more representative of the South African population.

External bursaries awarded in 2019/20 and 2018/2019 by population group

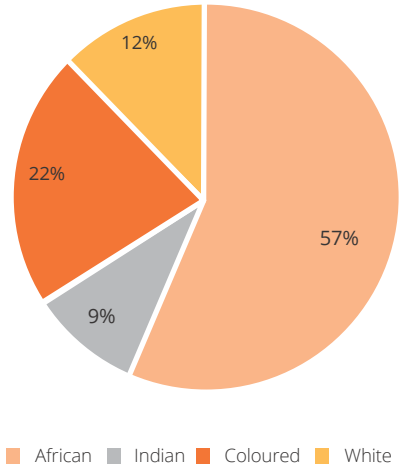


The selection and recruitment focused on reaching students from all walks of life and different backgrounds, especially those from rural areas and disadvantaged communities to make an impact and add to the educational footprint in South Africa.

External bursaries awarded in 2019/20 by gender of recipients



External bursaries awarded in 2019/20 by population group of recipients

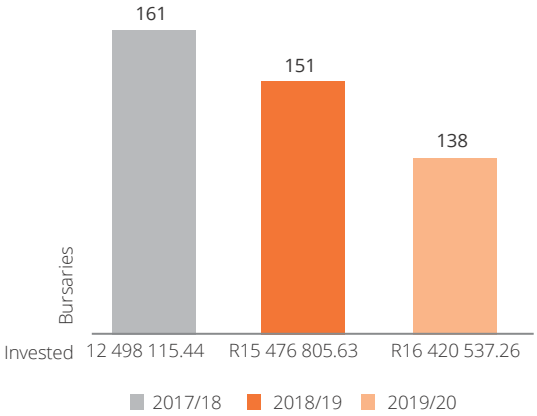


To develop students holistically to become individuals actively contributing to the progress of the civil engineering industry and the country in general, SANRAL supports the external bursary holders with a Wellness Programme and provides mentorship, vacation work and, if accepted, graduate training once the degree is complete.

The SANRAL bursary programme is a tangible contribution to closing South Africa's skills gap, particularly in the civil engineering and road management disciplines. The bursary scheme aims, first, at supplying SANRAL with future engineers and staff and, second, at supporting the built environment in South Africa through the sponsorship and support of students.

In 2019/20 a total of 138 students received bursaries. The proportion of black bursary holders was 59% and the percentage of women 32%. While the latter figure is far from ideal, it is gradually increasing.

External bursaries - growing investment

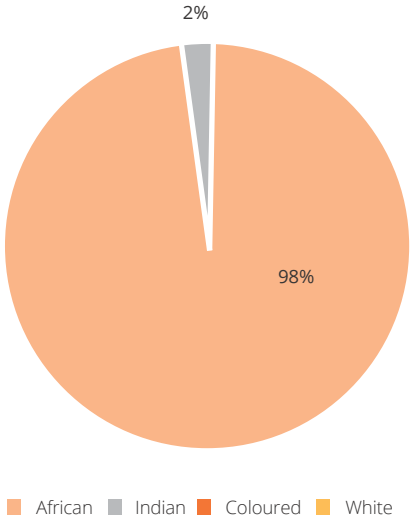


Internships

The regional offices facilitate the placement of a student in need of Work Integrated Learning (WIL) through road construction and maintenance contracts. The intern signs a WIL contract with the training provider (consultant) who provides the necessary training guided by the student's logbook as designed for their respective discipline. WIL is available to all disciplines and runs for either six, 12, or 18 months. In total, 158 interns were placed on SANRAL projects.

	African		Indian		Coloured		White		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Western Region	5	0	0	0	1	0	0	0	5	0	6
Southern Region	38	40	1	0	0	0	0	0	39	40	79
Northern Region	22	7	0	0	0	0	0	0	22	7	29
Eastern Region	18	24	1	1	0	0	0	0	19	25	44
									85	**72**	**158**

Interns working on SANRAL contracts in 2019/20 by population group



6.5 THE TECHNICAL EXCELLENCE ACADEMY

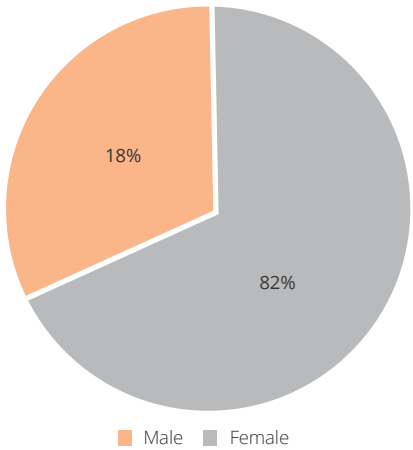
The Technical Excellence Academy (TEA) is a SANRAL-funded facility that enables engineering graduates to fulfil the much-needed practical experience required for professional registration with the Engineering Council of South Africa (ECSA). Selection for the TEA is arguably the most exciting way to join the Agency, with a range of work exposure opportunities open to TEA candidate engineers, along with access to essential tools—from specialised software to laboratory facilities—with the aim of fast-tracking the exposure required for professional registration of civil engineers.

The ECSA training programme spans 48 months, made up of three months of materials testing at a laboratory, 15 to 18 months of site supervision training, 18 to 21 months of training in the aspects of road design and 12 months of project management training. The candidate engineer works on live projects, with the design and laboratory training phases carried out at the Southern Region offices. In contrast, the site supervision and project management training is spread over all the SANRAL regional offices.

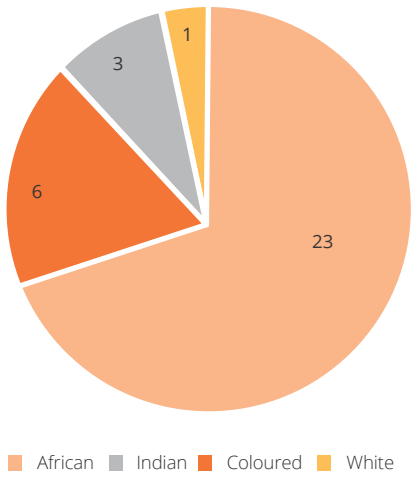
Since the opening of its doors in 2014, 99 candidate engineers have passed through the TEA. Of these, 28 candidate engineers have completed the full training programme, with ten obtaining professional registration with ECSA. An additional six candidates await results and the remainder are in the process of planning their submissions. During 2019, the TEA housed 35 candidate engineers who had already completed the design and laboratory training phases, ten who had completed the design and site supervision phases and five who completed the design, site supervision and laboratory training phases.

The intake for 2020 included 14 new candidate engineers, including a quantity surveyor seconded for professional training. The TEA currently has 33 active candidate engineers in the design phase in Port Elizabeth, including six candidates seconded from the KZN Department of Transport for professional development.

TEA: Gender composition of 2019 candidate engineers



TEA: Composition of 2019 candidate engineers by population group



6.6 EMPLOYEE WELLNESS PROGRAMME

The Agency actively promotes this service and a total of 60.8% of employees utilised Ekhaya Wellness during 2019/20. Of the staff establishment, 15.2% took advantage of individualised services. The vast majority of staff participated in the newly developed health initiatives such as the "move" drive which promoted physical movement, such as walking and running. The drive saw individual offices register SANRAL running clubs resulting in employees taking part in many road races across the country.

6.7 OCCUPATIONAL HEALTH AND SAFETY

SANRAL ensures compliance with all Occupational Health and Safety (OHS) legislation across the organisation through trained employees in all offices. Employees are trained in essential OHS competencies, such as first aid, firefighting, evacuation wardens and incident investigations in the workplace.

An OHS Cluster convenes quarterly to discuss employee health and safety. The OHS Cluster membership has increased from 86 to 99 members over the last year.

Compliance with OHS on construction sites is monitored through appointed external Professional Construction Health and Safety Agents, as well as through an in-house Health and Safety Agent. Construction sites are required to implement and maintain acceptable OHS standards. Monthly audits are conducted on construction sites and contractors are required to rectify non-compliances before the next audit.

The Federation for Employers Mutual Assurance Company Ltd (FEMA) has been appointed to manage all injuries on duty. During 2019/20 zero injuries were reported in SANRAL with zero person-days lost.

6.8 MARKETING AND COMMUNICATIONS

The significance of communications to SANRAL's success is recognised in Horizon 2030 by its identification of stakeholders as a critical corporate pillar. All marketing and communication activities underpin the Stakeholder Pillar, they also essentially are support functions that strengthen the other three SANRAL pillars: Roads, Road Safety and Mobility.

6.8.1 Stakeholder Engagement

The overwhelming reception and depth of meaningful, constructive engagement by various stakeholders and social facilitation engagements, illustrates the inroads made by establishing a working relationship with key stakeholders. Significant areas of engagement included enterprise development and training through the implementation of transformation policy and a 14-Point Plan affirming the SANRAL Horizon 2030.

During this financial year, SANRAL made notable strides in establishing relations with, importantly, the National House of Traditional Leadership, where the Chairperson attended and presented to a stakeholder-relations workshop. Here, we gained the commitment of this important institution to work with SANRAL and the Kingdom of AmaMpondo, Traditional Leaders at Msikaba North and Ingquza Hill Local Municipality, on road infrastructure projects going forward.

We also engaged with N2WC Business Forum, various business people and the Transport Association. Continuous engagements and management of stakeholder concerns yielded positive results for the construction of the Msikaba Bridge.

In the Western Region, collaboration with the National Department of Transport's non-motorised transport campaign "Shova Kalula", in schools captured the attention of stakeholders, making it easier to launch a successful "Taking SANRAL to De Aar" engagement. At this event, the Premier of the Provincial Government of the Northern Cape pledged full support for SANRAL. This was reiterated in the State of the Province Address, where the significant work rolled out by SANRAL in the province was highlighted.

The Northern Region, Mpumalanga province, experienced a tremendous reception from stakeholders and SMMEs. The Transformation Policy, in so far as it also empowers grade one- and two-level companies, was commended and triggered a warm reception of SANRAL operations by stakeholders.

In Gauteng, stakeholder engagement focused on SMMEs access to opportunity within the SANRAL RRM project. A critical bottleneck resolved by the meetings was the reopening of the N3 Germiston project after its closure by the Business Forum.

In North West, enhanced alignment among key government stakeholders affirmed cooperation and support for SANRAL. SMMEs welcomed the platforms that facilitated their access to information around SANRAL projects and its Transformation Policy.

SANRAL successfully managed to address various issues of discontent within communities through multiple engagement platforms. Importantly, finesse in managing relationships in such politically intricate environments has proved critical in creating a conducive climate for SANRAL operations. The emphasis on local participation in SANRAL projects has allowed for improved working relationships.

Key stakeholder relationships were maintained at functional levels in Limpopo province and this provided a conducive environment for various interventions and engagements to be successfully implemented. All the "Taking SANRAL to the people" campaigns were well attended and the engagement content was focused on the transformation policy and its execution and localisation.

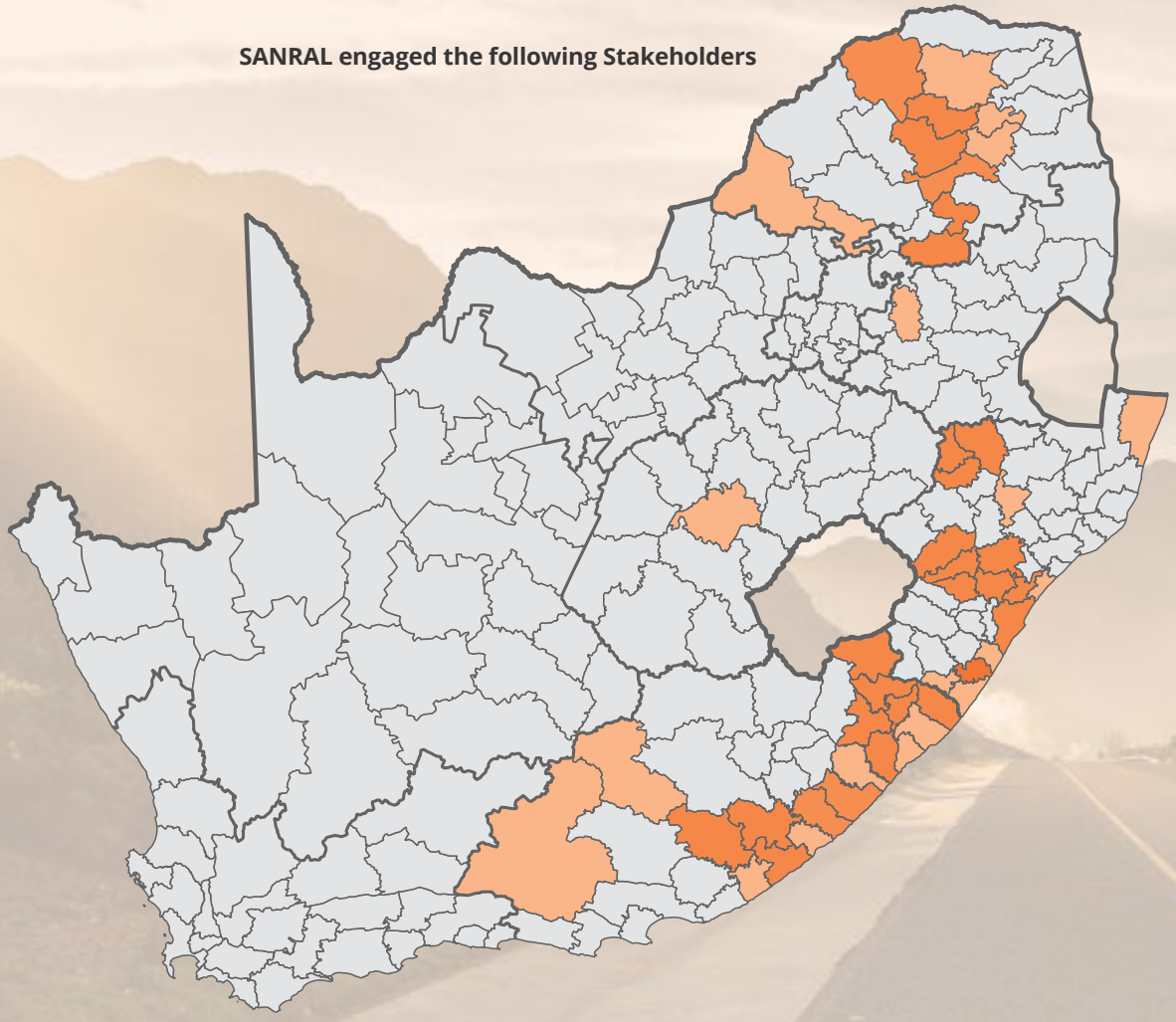
Stakeholder engagement activities

During the financial year, SANRAL engaged with various stakeholders, including more than 30 municipalities, to create awareness of SANRAL projects. These engagements contributed to campaigns around road infrastructure development of the provinces, resolved SMME concerns and informed them about SANRAL's strategy New Horizon, the Transformation Policy, 14-Point Plan and our Procurement Processes. SANRAL also engaged with numerous transport authorities and business chambers, including, among others:

- African Chamber of Business (ACOB)
- Durban Chamber of Commerce
- South Coast Chamber of Commerce and Industry
- South African Women in Construction (SAWIC)
- National African Federated Building Industry (NAFBI)
- Association of Business Forums
- Free State Youth Chamber of Commerce and Industry
- Goldfields Chamber of Commerce and Industry
- Phenomena Women Chamber of Commerce

The area of Intergovernmental Relations (IGR) as part of Stakeholder Relations was demonstrated by the number of meetings with and participation in various forums of spheres of Government by SANRAL. This has improved communication with the Government regarding work done for communities and citizens. SANRAL also initiated significant engagements with the South African Local Government Association (SALGA) to formalise relations and areas of cooperation on all matters of public participation, local economic development and the relevance of road infrastructure by SANRAL to all citizens.

SANRAL engaged the following Stakeholders



1. Ngqushwa Local Municipality
2. KSD Local Municipality
3. Inxuba Yethemba Municipality
4. Port St Johns Local Municipality
5. Buffalo City Municipality
6. Beyers Naude Municipality
7. Great Kei Municipality
8. Amathole District Municipality
9. Alfred Nzo District Municipality
10. ORTambo District Municipality
11. Ingquza Hill Local Municipality
12. Emalahleni Local Municipality
13. Elias Motsoaledi Municipality
14. Greater Tzaneen Municipality
15. eThekwini Metropolitan Municipality
16. uMgungundlovu District Municipality
17. uMhlabuyalingana Local Municipality
18. Kwa-Dukuza Local Municipality
19. Thabazimbi Local Municipality
20. Capricorn District Municipality
21. Makhado Local Municipality
22. Greater Letaba Local Municipality
23. Bela Bela Local Municipality
24. Makhuduthamaga Local Municipality
25. Nquthu Local Municipality
26. Amajuba District Municipality
27. Masilonyana Local Municipality
28. Ugu District Municipality
29. Ray Nkonyeni Local Municipality
30. Umzumbe Local Municipality
31. Umuziwabantu Local Municipality
32. Umdoni Local Municipality

April 2019: Career Expo in George, in collaboration with WCED and sister agencies

WR Manager Randall Cable and stakeholders

SANRAL

N Route

N12 BRIDGE OVER ORANGE RIVER – THE NEXT 50 YEARS

21 SANRAL 2074

GOOD NEWS STORIES

Multi-media release - stop-over.co.za

Orange River Bridge - N12 Hopetown

pressoffice.mg.co.za/SANRAL

Elma's Oliphants River Fulton award

SANRAL

Mail Guardian virtualpressoffice

Read time: 3 minutes

Highest honour for SANRAL

Issued by SANRAL
Pretoria, 25 Jun 2019

The new SANRAL arch bridge on the N7 near Clanwilliam over the Olifants River in the Western Cape is this year's winner of the prestigious Fulton Award for excellence in concrete construction.

The award acknowledges "the quality of SANRAL's design and engineering capabilities. It also underlines its ability to work with contractors, clients, suppliers and labour to deliver world-class projects," explained Louw Kannemeyer, engineering executive of the roads agency.

The bridge is part of the upgrading of the N7 from Cape Town to the Namibian border, one of the important trade and tourist routes in the country. It consists of the construction of a new road and bridge across the river adjacent to the present bridge, which was deemed to be unsafe and incapable of handling large volumes of traffic.

It is 166 metres long with a 93 metre-long arch. The Fulton Award judges noted the attention to detail in design and construction and the quality of the concrete finish, which make the bridge "a testament to excellence in the use of concrete".

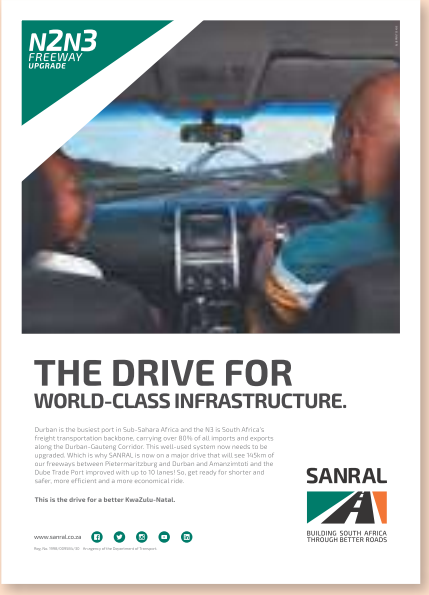
It is the highest honour bestowed by the Concrete Society of Southern Africa. It celebrates excellence and outstanding achievements in concrete engineering and architecture. It attracts

6.8.2 Advertising and Marketing

The role of advertising and marketing for SANRAL is to enhance public perception, to educate and create awareness about SANRAL and its projects to South Africans at large—particularly road users—and provide information to respect the value that SANRAL delivers in connecting and building the nation. This strategy contributes to creating a positive reputation and image of the brand.

In 2019/20, SANRAL flighted 11 advertising campaigns addressing the key brand pillars: Roads, Road Safety, Stakeholders and Mobility. These messages were spread across television, cinema, radio, print media, digital media, outdoor media, stadium branding, murals and airtime vouchers. The total spend on advertising and marketing amounted to R148m in 2019/2020. As with all aspects of the business, in advertising and marketing a strong emphasis is placed on supporting local business and community media, for example, purchasing advertising airtime and space from community media partners.

ADVERTISING



Summary of 2019/20 advertising campaigns

CAMPAIGN	MASS MEDIA	PURPOSE
'Family' Brand Campaign	TV Radio Print Outdoor	This was a rerun of the first in our brand campaign series, focusing on connecting and building the nation. Here the story highlights the social benefits of Roads and Mobility while adding warmth, emotion and a human touch to the brand.
'Coffee' Brand Campaign	Radio Print Cinema Outdoor	This was a rerun of the second in our brand campaign series on connecting and building the nation. Here, the story highlights the economic benefits of Roads and Mobility. While it is about SANRAL facilitating business, it is still told with warmth, emotion and humanity.
'World Class Infrastructure' Brand Campaign	Cinema TV Radio Print Digital Screens Outdoor	Developed in 2019, this was the latest in our brand campaign series where we moved from brand benefits back to the basics of what SANRAL provides, its core engineering. Here the story serves to highlight the growth and efforts by SANRAL and the benefits of our infrastructure projects by showcasing key projects such as the Mount Edgecombe interchange, the Masikaba Bridge, the William Nicol interchange and the Polokwane Ring Road. The narration and backing song by Ladysmith Black Mambazo adds local warmth and humanity to what is otherwise seen as a cold world of concrete and bitumen.
'Whoa' Road Safety Campaign	TV Radio Print Outdoor Airtime Vouchers	This campaign addressed the Road Safety pillar serving to help people recognise their "whoa!" moments (when they literally need to stop or pause to reconsider) and do the safe thing rather than get behind the wheel. The campaign was developed for the Easter and Festive periods.
Road Safety 365 Campaign	Radio Outdoor TV Print	This campaign, also a rerun, served as a fresh approach to encourage safer road use by adults through appealing to their desire to be good role models for their children. It demonstrated that children learn from adults' actions and that if parents practised good road safety behaviours, their children will too.
'Overloading' Road Safety Campaign	Radio Print	This campaign highlighted the dangers of vehicle overloading and the damage this causes to roads. It targeted drivers as well as vehicle owners, including those in the taxi and trucking industries.

Summary of 2019/20 advertising campaigns (Cont.)

CAMPAIGN	MASS MEDIA	PURPOSE
'N2 Wild Coast Vul' indlela' Project Campaign	TV (local) Radio dramas Print Outdoor	This campaign, a rerun, was developed to showcase the work that SANRAL is doing in the region and how the construction and development of the new roads also serves to enhance and grow local communities and the region. It goes to demonstrate that SANRAL is not just about building roads, but also communities.
'N2N3 Freeway Upgrade' Project Campaign	Cinema (regional) TV Print Radio Outdoor Digital screens	The N2N3 Freeway upgrade project was identified as a SIP1 project by government. The campaign was aimed at showing people in KZN, SANRAL's engineering efforts to improve travel times and help to grow the economy by creating employment.
Women's Month Tactical Campaign	Radio Print	This campaign addresses the Stakeholder pillar enabling SANRAL to confirm its commitment to gender equality in what remains a male-dominated sector. It also served to showcase women succeeding in a male-dominated industry.
Youth Month Tactical Campaign	Radio Print	This is a tactical campaign focused on young people who have benefitted from SANRAL's internship and bursary programme and highlighted the Agency's contribution to youth development.
Matric Congratulatory Tactical Campaign	Print	This was a tactical campaign developed to celebrate the scholarship and bursary students of 2019/2020. It demonstrated how SANRAL aims to uplift and help underprivileged students who want to study engineering.

Advertising and Marketing achievements

In late 2019, through its advertising and media agencies, SANRAL commissioned a brand health survey to establish trends on the effect of the advertising campaigns. This survey was conducted shortly after the "World Class Infrastructure" (WCI) campaign launched and the results show that every measure from "Equity" to "Reach" to "Impact" enjoyed a significant uplift against the 2018 data. Overall the brand impact doubled from last year.

Recent advertising campaigns have attracted positive recognition in the media. SANRAL won an Orchid from the Citizen for the "World Class Infrastructure" campaign.

Perhaps most notably, the WCI television advert is, we believe, the first advert ever to be referenced by a South African president during a national budget speech in July 2019.

#OrchidsandOnions: Sanral bravely tackles the long road back from reputation damage...

As far as government agencies or parastatals that we "love to hate" go, the SA National Roads Agency Limited (Sanral) is right up there with Eskom.

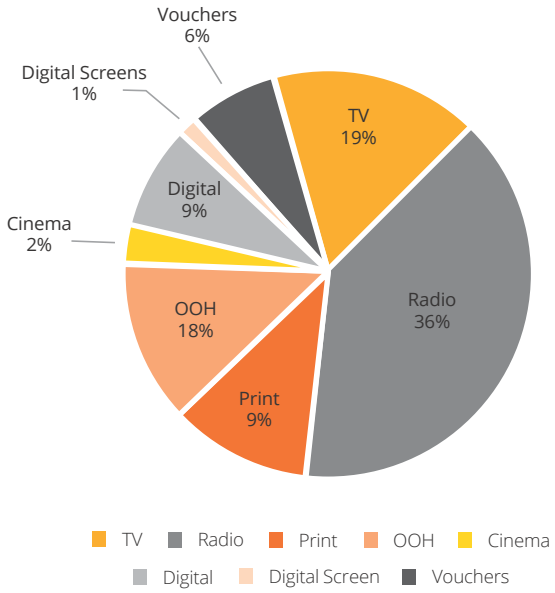
The roads agency, it must said from the outset, plays a critical role in the South African economy, designing and building what is still the best highway infrastructure in Africa ... The kind of image which is used regularly to set us apart from the rest of the continent.

Yes, Sanral has such a bad public image that the mere name has almost become a swear word.

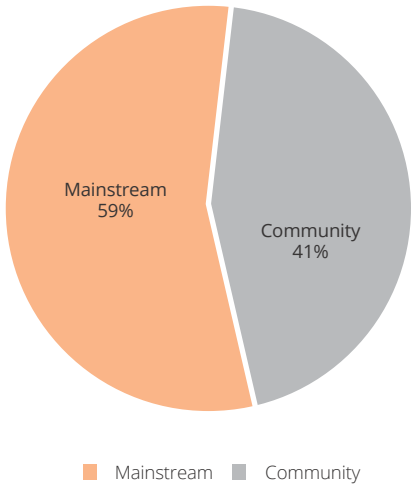
And that is, as we all know, because of the contentious e-toll project in Gauteng ... or, more correctly, from the way the Gauteng Freeway Improvement Project was implemented – which millions of road users believe disregarded them.

Period: Financial year April 2019 to March 2020

Share of media spend by media type



Ratio of national to community media advertising spend



6.8.3 Media Relations

Equally valuable to campaigns is SANRAL's engagement with editors and other journalists to ensure its voice is heard clearly in the news pages of newspapers and the news and current affairs programmes of TV and radio. It is in the editorial space (rather than advertising space) that matters of major public interest are reported and debated.

Daily interaction with media was monitored on behalf of SANRAL, including over weekends and on public holidays. This was complemented by daily reports, both in the mornings and afternoons.

SANRAL's willingness and ability to share information with journalists on a daily basis was effective. During the year, a total of 47 media releases were distributed and 135 queries from journalists were answered. The Agency continues to take a proactive approach to the media through the distribution of media releases.

The overall tone and sentiment of reporting across the year were mainly neutral in tone or contained mixed views on SANRAL. While a percentage expressed a positive view of the Agency, there were also some negative responses.

Measures of media engagement 2019/20

Total media releases	47
Total media queries	135
Total traffic advisories	64
Total road user queries	50
Total holding statements	4
Total 1-on-1/interviews	14
Total letters	3

6.8.4 Publications and Content

SANRAL produces a range of printed and digital publications for the general public, various stakeholders and its staff members.

The print format publications are distributed in various ways such as supplements inserted in community, regional and national newspapers, including directly to selected communities and toll plazas, shopping malls, taxi and bus ranks and through the Agency's regional offices. We also distribute various leaflets and electronic mailers.

Two of the semi-annual publications were translated into official languages spoken in the project areas:

- Moloto Road Booklet: English, Sepedi, IsiNdebele
- N2WC Booklet: English and IsiXhosa

Most publications are uploaded to SANRAL's corporate website (www.nra.co.za) and the SANRAL Stop-over blog (www.stop-over.co.za).

Details of regular SANRAL publications in 2019/20

Publication	Audience	Frequency	Number printed/ distributed per edition
National publications			
By the Way A free magazine covering all aspects of SANRAL's work	General public	Six times per year	300 000 per edition
People's Guide Summary version of the annual integrated report	General public	Annual	1 000 000 inserted in various newspapers
Investing in series with each edition focussing on a particular deliverable in the Horizon 2030			
Investing in the Community *Investing in Road Safety*	Both editions are intended for the general public	Annual for both editions however they were published at different times in the year	1 000 000 Was only published on the SANRAL website
Provincial publications			
Hello . . . series Each edition describes work in a different province	General public per province	Nine times per year	Quantities vary per edition ranging between 300 000 – 500 000 per edition, however Hello Gauteng and Eastern Cape editions were only published on the SANRAL website
Publications for Internal and external stakeholders			
N-route Keeps external stakeholders informed of developments	Stakeholders in government, finance, industry	Four per year	Published on the SANRAL Stop-Over Blog
Youth Month Digital Highlights SANRAL's interventions for youth	General public with a special focus on youth	Annual	Published on the SANRAL Stop-Over Blog

Details of regular SANRAL publications in 2019/20 (Cont.)

Publication	Audience	Frequency	Number printed/ distributed per edition
Publications for Internal and external stakeholders (continued)			
InRoads Content of interest to staff, including lifestyle features	SANRAL employees	11 per year	400 plus employees
On the Road Interesting engineering and environmental articles	SANRAL employees	Four per year	400 plus employees
Toll Tariff Adjustment	General public	Annual	297 500
Semi-annual publications			
Booklets on *Moloto Road* and *N2 Wild Coast* projects	Communities in the project areas	Twice a year	3 659 (Moloto) 5 947 (Wild Coast)
Occasional publications			
N2N3 Freeway Upgrades	Communities in the projects area	Once-off	10 000
Horizon 2030	Staff and stakeholder	Once-off	10 000

Publications research outcomes

In 2019, SANRAL commissioned PLUS 94 to conduct a research survey to establish the effectiveness of its owned-media publications in improving its image and reputation. The survey was focused on selected publications as follows: *Hello* provincial series, *Investing in* series, *By The Way* lifestyle magazine, projects-linked booklets and *InRoads* newsletter.

The research comprised four components, each of which covered a different cluster of stakeholders and followed a different research methodology.

The research generated empirical baselines for SANRAL's overall reputation and enabled us to understand a full spectrum of information needs our owned media could meet. SANRAL operated from the premise that, if members of the public appreciated the value of high-quality roads—in terms of making their lives safer, more convenient and more pleasant—they would value the Agency as well.

Most respondents indicated that SANRAL fully understood and lived its public mandate and that generally, SANRAL was free of corruption. The research revealed a lack of familiarity with SANRAL: one-third of the respondents knew nothing or very little about the organisation.

Stakeholders and commuters were aware of SANRAL because of e-tolls. TV was the most significant platform and 46% of respondents said it was their primary platform for news stories, articles, or media features about SANRAL. Publications rated very low—only 19%—but there was a significant positive change in respondents' perceptions of SANRAL after being exposed to SANRAL's owned publications.

The recommendation was that SANRAL does more to educate the public about its official role and that it should continue taking steps to be known to the public outside of e-tolls. A further recommendation was to improve the awareness/visibility of owned publications.

PUBLICATIONS

6.8.5 Digital and Social media

There was increased interest in all SANRAL's social media properties in 2019/20 and the Agency strove to sustain this through a constant flow of fresh, relevant content. Thousands of items were posted during the year.

Social platform	Total followers/ fans/ subscribers 31 March 2020	Annual growth in followers/ fans/ subscribers	SANRAL posts/ tweets/ uploads	Engagement	Impressions
Facebook	233 087	18,6%	786	1 509 472	17 089 983
Twitter	48 741	47,2%	2 145	220 486	3 546 572
Instagram	8 730	103%	578	21 706	1 764 278
Linked in	18 286	95,6%	97	35 243	458 340
Youtube	696	28%	25	724,197	724 236

6.9 INFORMATION TECHNOLOGY

Enabling value creation: information communication technology systems

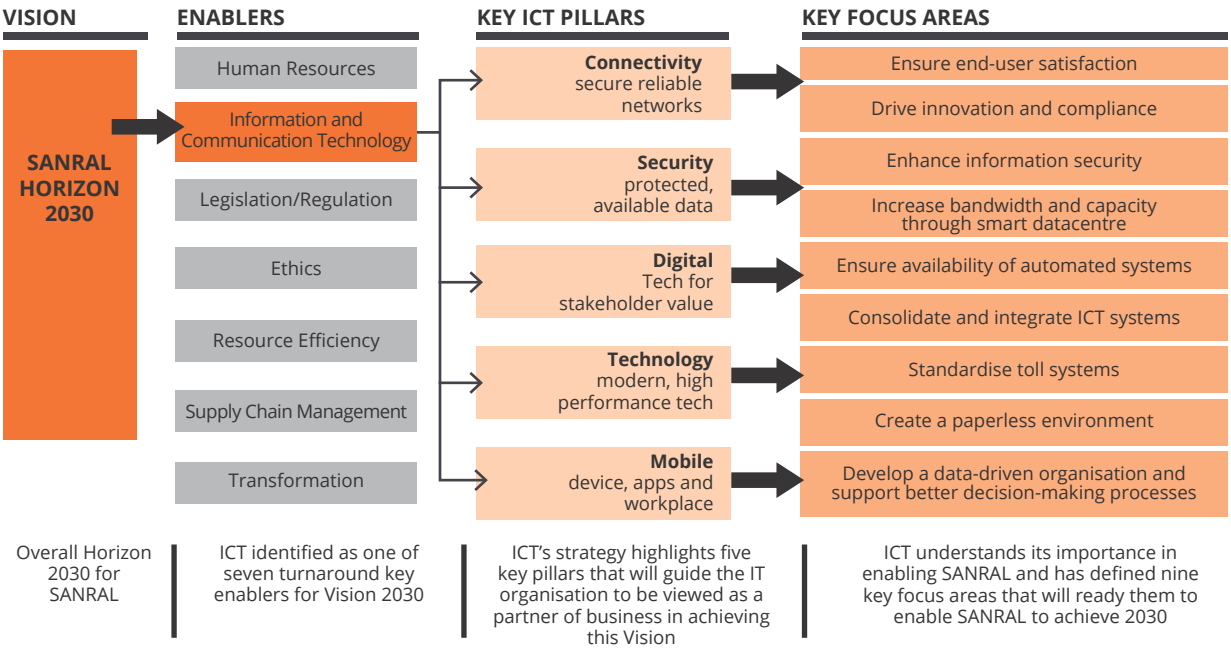
The year in review

Technology-driven solutions are increasingly prevalent in the organisation to address evolving business needs. This has given rise to new ways of working and providing service delivery to our workforce and users of our world-class road network. The use of data analytics on our engineering projects as well as monitoring how our stakeholders are adopting our services is driving behaviour. This informs our priorities and technology roadmaps.

In accelerating service delivery and business efficiency, innovation must outweigh the cost of investing in new technology. Cost must be measured against the impact of doing nothing and becoming irrelevant as an organisation.

Delivery against the five-year ICT strategy

The information technology team spent time refreshing annual targets through strategic stakeholder needs assessments and aligning our goals with those of the broader organisation. The strategy identified five key pillars to support the nine key focus areas in enabling SANRAL to realise Horizon 2030.



ICT Strategy on a Page

The alignment of the ICT strategy identified six preliminary target states aligned to key pain-points across the business. The primary focus was around the identification of the target state for the company. This target state is informed by:

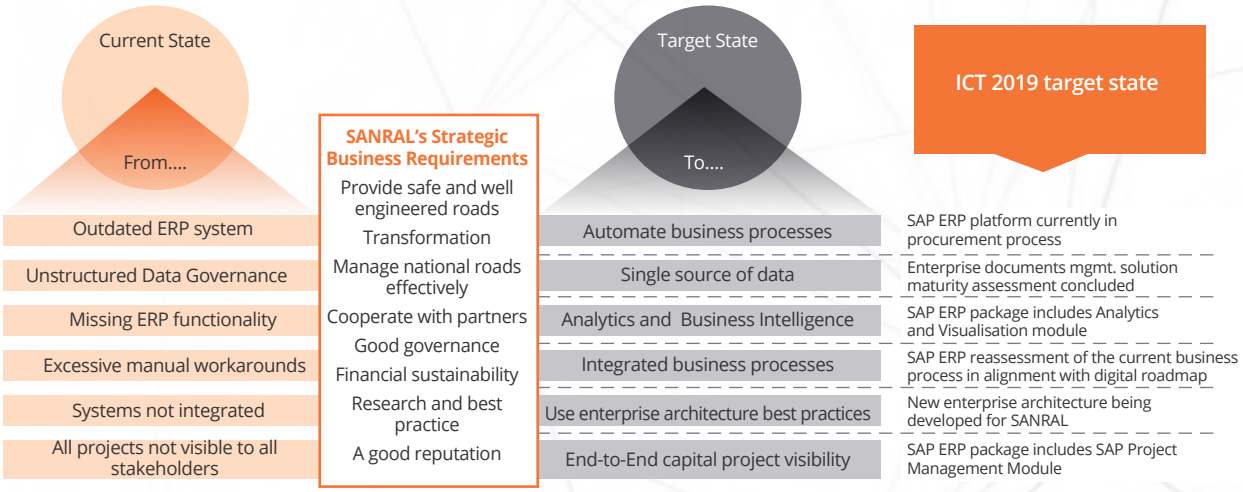
Integrated business processes	Critical business processes need to be integrated to ensure optimal connectivity of systems within the landscape.
Open to the nuances	Technology/application specific requirements (especially in road networks) must be allowed into the organisation but governed through the ICT function for visibility.
Single source of data	Data sources should store data in a master data warehouse and different business units should have data marts to have contextual data.

Analytics and Business Intelligence (BI).	Ensure business services and decision making is driven through BI and analytics.
Automate business processes.	Productivity increases can be gained through efficiently automating all redundant processes in the organisation, allowing employees to focus on more strategic work.
Use enterprise architecture best practices.	Ensure alignment to single architecture and standards for development/ procurement of new applications.
End-to-End capital project visibility.	Ensure that there is full visibility and transparency on capital projects, with a benefits tracking mechanism to ensure that the organisation is getting the value that was promised.

Understanding the target state required a high-level application assessment. The outcome of the primary intervention is captured in the figure below.

- Define the criteria for assessing the applications. The chosen methodology was Desirability, Feasibility, and Viability.
- Obtain the full list of current applications in the landscape.
- Interview application users and obtain feedback against the criteria stipulated in step 1.
- Assign applications to either category.
- Keep, Replace, or Retire.
- Consolidate rationalisation initiatives into the overall roadmap.

Current state to target state



Planning, design and procurement

The projects listed below were informed by the five-year strategy and the annual realignment. The year involved the following:

- ICT needed to define and implement the enterprise architecture standards and guidelines that would govern technology in the SANRAL environment.
- The innovation and development of SANRAL's ERP and BRIM (Toll System) tools are reliant on the development roadmap of SAP.
- Business cases have accompanied all initiatives on the road map.
- The business value will be tracked and managed on an initiative-by-initiative basis.
- Strategy and Transformation functions will obtain technology enablement through SAP Analytics and Digital Boardroom.

SANRAL is on a journey to rationalising its current application landscape and moving to newer applications (road network)

Application name	Planning	Design	Procurement	Project Initiation	Project Delivery	Outcome
SAP ERP (digital transformation)	●	●	●	◕	◑	SAP Partner has been appointed
Toll system	◕	◕	N/A	N/A	N/A	Discovery and technical requirements in progress
Document mgmnt system upgrade	●	●	◑	N/A	N/A	Maturity assessment completed – technical design
Wan upgrade	●	●	◑	N/A	N/A	Design and technical requirements completed
Advanced traffic management	●	◕	◕	N/A	N/A	Replace with newer version of ATMS
Advanced traffic information	●	◕	◕	N/A	N/A	Replace with newer version of ATIS
Microsoft teams (video conference expansion)	●	●	●	●	●	Keep and integrate Microsoft Teams current point-to-point solution.
Office 365	●	●	●	●	●	Implemented – reviewing feature enhancements
Cloud strategy	◑	N/A	N/A	N/A	N/A	For Microsoft solution (Exchange online)
Electronic board pack	●	●	●	●	●	Deployed

N/A ● Completed ◕ Advanced ◑ Started

Performance and Governance

The Information Technology Department continued to deliver high-performing systems and solutions that ensured our business continued to deliver superior services to road users and our stakeholders.

COVID-19: The ICT team ensured the organisation could actively engage with stakeholders through this challenging time and monitored the impact the pandemic could have on our business.

Performance Metrics

Key Applications	Target	Actual
Core Corporate ICT systems • Email • ITIS • Enterprise Resource Planning (ERP) • Wide Area Network (WAN) • Microsoft		
GORT ICT Systems • Back Office and Roadside Systems (RSS) • Transaction Clearing House (TCH) • Violations Processing Centre (VPC)		
ORT Communications Backbone		
National Freeway Management Systems • Advanced Traffic Management System (ATMS) • Advanced Traveller Information System (ATIS)		

Governance

SANRAL believes good corporate governance is not merely a matter of compliance. It is an organisation-wide set of principles, frameworks and risk-management practices that ensure we align our choices with our values and strategic objectives and that we hold stakeholders, service providers and employees accountable for their actions and decisions. We review our governance frameworks and practices regularly to ensure they stay current for changing regulations and emerging risks.

The 2019/20 audits had not been concluded by the time this report went to press.

We continue to monitor and oversee the delivery of our information technology strategy to ensure on-time and in-scope delivery. In 2020 and beyond, we will focus on the progress of the key projects outlined in this report and the continued investment in new digital ways of working.

We will monitor the progress of the agreed plans to see the value delivered by the SAP digital transformation project and how it will revolutionise our ways of working.

We will manage key ICT risks relating to information and cybersecurity, while continuity of business-critical systems will remain a key focus.

ACRONYMS AND ABBREVIATIONS

AGSA	Auditor-General of South Africa
ALCO	Assets and Liabilities Committee
ARC	Audit and Risk Committee
ASANRA	Association of Southern African Roads Agencies
BBBEE	Broad-based black economic empowerment
BEE	Black economic empowerment
bn	billion
CDP	Community development project
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CCTV	Closed circuit television cameras
CIDB	Construction Industry Development Board
CIPC	Companies and Intellectual Property Commission
COTO	Committee of Transport Officials
CPD	Continuing professional development
CPI	Consumer price index
CSIR	Council for Scientific and Industrial Research
DBSA	Development Bank of Southern Africa
DEA	Department of Environmental Affairs
DOT	Department of Transport
ECSA	Engineering Council of South Africa
EE	Employment Equity
EEI	Expenditure Efficiency Index
EIA	Environmental Impact Assessment
EME	Emerging micro-enterprise
EMP	Environmental Management Plan
ETC	Electronic Toll Collection Ltd
EWT	Endangered Wildlife Trust
FMS	Freeway Management System
GDP	Gross Domestic Product
GFIP	Gauteng Freeway Improvement Project
GTS	Green Transport Strategy for South Africa: 2018 - 2050
HSRC	Human Sciences Research Council
IAS	International Accounting Standard
ICT	Information Communication Technology

IDP	Integrated Development Plan
IFRS	International Financial Reporting Standards
km	kilometres
KPI	Key Performance Indicators
m	million
MoU	Memorandum of Understanding
N3TC	N3 Toll Concessions (RF) Proprietary Limited
NDB	New Development Bank
NMT	Non-motorised transport
NMU	Nelson Mandela University
NT	National Treasury
OCI	Overall condition index
OHS	Occupational Health and Safety
ORS	On-road services
PFMA	Public Finance Management Act
PIARC	World Road Association
PPE	Property, plant and equipment
PPP	Public-private partnerships
PPPFA	Preferential Procurement Policy Framework Act
PSII	Public Sector Investment Index
PT	Public transport
QSE	Qualifying small enterprise
RIMS	Road Incident Management System
RRM	Routine Road Maintenance
RSE	Road Safety Education
SABPP	South African Board of People Practices
SADC	Southern African Development Community
SAHRA	South African Heritage Resource Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency SOC Limited
SARDS	South African Road Design System
SCM	Supply chain management
SETC	Social, Ethics and Transformation Committee
SIMC	Strategy Implementation Monitoring Committee
SIP	Strategic Integrated Project
SMME	Small, medium and micro-enterprise
SOC	State-owned company
SOE	State-owned enterprise
STEM	Science, technology, engineering and mathematics
STIS	Short-term incentive scheme
SU	Stellenbosch University
TE	Targeted Enterprise
TEA	Technical Excellence Academy
TIH	Technical Innovation Hub
TMC	Traffic Management Centre
TRAC	Trans African Concessions Pty Ltd
UCT	University of Cape Town
UFS	University of the Free State
UP	University of Pretoria
VAT	Value Added Tax
VMS	Variable message signs
WAN	Wide area network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