Published by:
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RESEARCH CHANNEL
AFRICA

ROAD & RAIL

MAY **2019**

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A REVIEW OF SOUTH AFRICA'S

ROAD & RAIL SECTOR

The material contained in this report was compiled by Chanel de Bruyn and the Research Unit of Creamer Media (Pty) Ltd, based in Johannesburg.

The information in this report is correct as of May 21, 2019.

Report edited by Sheila Barradas, David Shepherd and Ria Theron.

Ordering information
To subscribe to *Research Channel Africa* or purchase this report contact:
Creamer Media (Pty) Ltd
Tel +27 11 622 3744
Email subscriptions@creamermedia.co.za

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LIST OF ABBREVIATIONS AND ACRONYMS

BCC	Bombela Concession Company
BRT	bus rapid transit
capex	capital expenditure
CNR	China North Rail
CSR	China South Rail
DoT	Department of Transport
DTI	Department of Trade and Industry
ETC	Electronic Toll Collection
GFB	general freight business
GFIP	Gauteng Freeway Improvement Project
GMA	Gautrain Management Agency
GTA	Gauteng Transport Authority
IPTN	integrated passenger transport network
JRA	Johannesburg Roads Agency
MDS	Market Demand Strategy
Meca	manganese export capacity allocation
MLPS	Main Line Passenger Services
MTEF	Medium-Term Expenditure Framework
N2WCR	N2 West Coast road
OEM	original-equipment manufacturer
opex	operational expenditure
PRASA	Passenger Rail Agency of South Africa
PRASA Cres	Passenger Rail Agency of South Africa Corporate Real Estate Solutions
PRASA Tech	Passenger Rail Agency of South Africa Technical
PRMG	provincial roads maintenance grant
RSR	Railway Safety Regulator
RTRP	Revised Taxi Recapitalisation Programme
Safcec	South African Forum of Civil Engineering Contractors
Sanral	South African National Roads Agency Limited
SAPS	South African Police Service
SID	special investigation device
SOE	State-owned enterprise
TFR	Transnet Freight Rail
TRSA	Taxi Recapitalisation South Africa

KEY DEVELOPMENTS

September 2017: The South African National Roads Agency Limited publishes its new Horizon 2030 Strategy.

March 2018: State-owned transport and logistics utility Transnet signs a seven-and-a-half-year manganese export capacity allocation agreement with diversified miner South32.

June 2018: The South African National Taxi Council reiterates its call for government to provide a public transport subsidy for the minibus taxi industry.

July 2018: Transnet signs a seven-and-a-half-year manganese export capacity allocation contract with manganese miner Assmang.

January 2019: The Aveng Strabag joint venture declares force majeure at the South African National Road Agency Limited's Mtentu bridge contract, in the Eastern Cape, as a result of safety concerns.

January 2019: Transnet says it will review the agreements with three rolling stock original-equipment manufacturers who were contracted to supply it with locomotives under the 1 064 locomotives programme.

January 2019: The Gautrain Management Agency announces that a tender for the procurement of additional trainsets for the Gautrain had failed to identify a winning bidder.

February 2019: The Aveng Strabag joint venture terminates the Mtentu bridge contract, in the Eastern Cape.

March 2019: Various construction industry bodies approach government to intervene in bringing an end to the violent practices of entities that seek to unlawfully gain an interest in certain construction projects.

March 2019: Transport Minister Dr Blade Nzimande announces that an additional R3.50-billion of funding will be made available for three key national road projects in South Africa.

March 2019: Transport Minister Dr Blade Nzimande reveals that a further R5.70-billion of funding from the South African National Road Agency Limited's (Sanral's) nontoll road network had been transferred to help cover costs in the toll portfolio and ensure that Sanral avoids a debt default.

March 2019: Parliament approves the Administrative Adjudication of Road Traffic Offences Bill.

March 2019: The South African National Road Agency Limited says it will temporarily halt the pursuit of outstanding e-toll fees while national government considers the future of the system.

March 2019: Finance Minister Tito Mboweni says the South African National Road Agency Limited has made the wrong decision in discontinuing the recovery of outstanding e-toll fees, warning of the impact this will have on the country's economy.

March 2019: President Cyril Ramaphosa experiences first-hand the frustrations of Metrorail passengers when he gets stuck on a train in Pretoria, Gauteng, for three hours.

March 2019: Locomotive refurbishment company Traxtion opens its new rolling stock maintenance and refurbishment facility, near Pretoria, Gauteng.

April 2019: The Gauteng provincial government approves the Gauteng Transport Authority Bill, paving the way for better integration of public transport systems in the province.

April 2019: Gautrain Management Agency CEO Jack van der Merwe is appointed, in the short-term, to lead the implementation of the Gauteng Transport Authority.

April 2019: Rail engineering company TMH Africa opens a rolling stock manufacturing facility, in Boksburg, Gauteng.

April 2019: Transport Minister Dr Blade Nzimande unveils the Revised Taxi Recapitalisation Programme, as a follow-up to the previous Taxi Recapitalisation Programme.

April 2019: The South African National Road Agency Limited (Sanral) reports that the North Gauteng High Court has denied an appeal against a decision confirming the agency's decision to proceed with the N2 Wild Coast Road. The appeal followed an earlier court judgment, which had determined that Sanral had met the public participation requirements during its environmental-impact assessment for the project.

May 2019: Transnet appoints Mohammed Mahomedy as acting group CEO, and Mark Gregg-Macdonald as acting CFO.

Picture by Creamer Media

INTRODUCTION

Billions of rands of investment are needed to expand South Africa's national road network and to ensure proper maintenance thereof. Public funding is stretched and insufficient to cover all expansion and maintenance requirements.

This has placed the South African National Roads Agency Limited (Sanral) in a difficult position in terms of how it funds new infrastructure, while road congestion is again becoming a significant problem, especially in the metropolitan areas, with road users sometimes spending as much as three hours a day in traffic.

Government and Sanral are seeking new means to fund road construction and maintenance. Sanral has suggested that it should limit the planned expansion of the national road network to ensure that it is better placed to focus its attention on what it can feasibly fund and manage.

South Africa's Department of Transport, in the interim, has developed a new draft Roads Policy in which it sets out possible ways to bridge the funding shortfall. According to a March 2018 BusinessTech article, South Africans could face increased taxes, including a proposed congestion tax to help fund road expansion and maintenance projects.

Meanwhile, years after the start of open-road tolling, or electronic tolling, on some of Gauteng's freeways, there is still much uncertainty about the future of the system, as the majority of road users refuse to pay e-tolls, while the National Treasury is adamant that users must, in some instances, pay to use public infrastructure.

Government is also continuing to advocate for more people to use public transport rather than their own vehicles to limit the impact of increasing vehicle ownership on South Africa's roads, as well as the resultant carbon emissions.

There are, however, various cost, reliability and safety concerns for commuters. The majority of public transport users in South Africa use minibus taxis to travel to and from work and school and, despite transporting the majority of public transport users in the country, it is the only form of public transport not supported by a transport subsidy.

Metrorail, the second most popular mode of public transport, is overcrowded and requires huge amounts of investment in signalling and rolling stock to ensure reliable services and the safety of commuters.

Other modes of public transport, such as the Gautrain rapid rail system, in Gauteng, and the various bus-rapid transit systems that are being implemented, face low ridership figures, which brings into question the future viability of these systems. The country needs to improve the integration of its various public transport systems to offer commuters a service that will enable them to travel wherever they need to go, but funding remains a challenge.

On the freight side, government is again advocating for more freight to be moved onto the rail network, but massive investment is needed in the freight rail system to ensure adequate capacity and performance. Corruption has, however, plagued State-owned transport and logistics company Transnet, but it is working with government to move beyond this and ensure that it is well placed to take advantage of growth opportunities not only in South Africa but also in the rest of Africa.

Transnet is, in particular, hoping to leverage its manufacturing capabilities to expand into the rest of the continent.

The country is also attracting other rolling stock manufacturers seeking growth opportunities in South Africa, as well as in the rest of Africa. Railway engineering company TMH Africa, a subsidiary of Russian firm Transmashholding Group, opened a 45 000 m² rolling stock manufacturing facility in April 2019, in Boksburg, Gauteng. The facility is used to manufacture and assemble new rolling stock, as well as refurbish and maintain existing rolling stock.

Private locomotive and rail operator Traxtion opened its new 7 370 m² rolling stock maintenance and refurbishment facility in March 2019, in Rosslyn, near Pretoria. The facility provides locomotive rebuild and overhaul services. Traxtion will use the facility as a base for rolling stock refurbishments for mining, industrial and freight clients across sub-Saharan Africa.

Picture by Creamer Media

Picture by Creamer Media

ROAD INFRASTRUCTURE IN SOUTH AFRICA

SIZE AND STATE OF THE ROAD NETWORK

According to South Africa's Department of Transport, South Africa's road network, which stretches about 750 000 km, is the tenth longest in the world and has a replacement cost of about R2-trillion. The country also boasts the eighteenth-longest paved road network in the world. South Africa's nine provinces manage about 47 348 km of road, while eight metropolitan municipalities manage about 51 682 km of road.

The South African National Roads Agency Limited (Sanral) is responsible for improving, maintaining and managing 94% of the country's 22 214 km national road network. Three public–private partnerships manage the balance of the national road network under 30-year concessions entered into with Sanral.

More than three-quarters of the national road network is beyond its 20-year theoretical design life and Sanral states that about 11% of the roads under its management are in a poor to very poor surface condition. Sanral has attributed this mainly to it having been mandated to take over management of certain provincial roads.

The roads agency's network is expected to eventually increase to as much as 35 000 km. The agency, however, warned in its 'Integrated Report 2018', that the growth of the national road network is exceeding the available public-sector funding for the development, improvement and maintenance of the network and that this could, in future, result in insufficient funding that could impact on the quality of the national roads network.

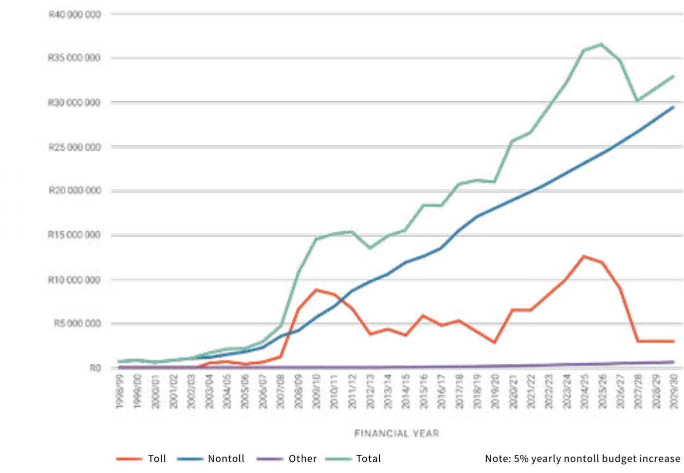
Sanral also, in its Horizon 2030 Strategy, published in September 2017, stated that increasing the Sanral road network to 35 000 km would reduce the budget per kilometre and negatively impact on road maintenance. The document states that this would result in the percentage of roads in a poor to very poor condition increasing to more than 35%. This, in turn, would contribute to higher vehicle operating costs for road users, increased journey times and impact on road safety, besides others.

The roads agency has proposed that, instead of increasing its network by 15 000 km, the network be extended by only 3 000 km, as this would result in a "more sustainable" national road network of 25 000 km that offers Sanral an improved budget per kilometre to undertake the necessary upgrades.

Sanral plans, through its Horizon 2030 strategy, to ensure an integrated funding strategy that includes allocations from the National Treasury, own revenue generation and private finance.

Road safety, meanwhile, remains a significant problem in South Africa and thousands of people die in vehicle accidents every year. While investment in road infrastructure forms part of initiatives to improve road safety, driver behaviour is

Sanral expenditure trend



Sanral's Horizon 2030 strategy

also of concern. After many years of testing the required systems for nationwide roll-out of the Administrative Adjudication of Road Traffic Offences Bill, Parliament approved the legislation in March 2019. President Cyril Ramaphosa is expected to sign it into law soon.

Road users will receive demerits against their driver's licences for certain infringements. If enough demerits are recorded, drivers also risk having their licences suspended or even cancelled.

Despite government's assurances that the Bill will improve safety on the country's roads, various civil rights groups have their reservations. There are questions regarding the delivery of infringement notices to road users, as well as regarding the effective enforcement of the legislation.

FUNDING

Sanral's road network includes tolled and nontolled roads. About 87% of the national road network is not subject to tolling, with the development, upgrade, repair and maintenance of these roads funded from a yearly grant from the National Treasury.

The roads agency relies on toll levies and borrowings on commercial markets to fund the development, upgrade, repair, maintenance and operation of a further 7% of the national road network, which is under Sanral's direct management.

The remaining 6% of the national road network is funded through tolling, but managed by three concessionaires that entered into 30-year concession agreements with Sanral for the construction, maintenance and operation of certain routes. The concessionaires are responsible for raising the required capital to fund the construction, upgrades, rehabilitation, maintenance and operational costs of these routes.

The National Treasury noted in its 2019 Budget Review, published in February 2019, that Sanral will receive R36.50-billion from the Treasury for the upgrade, strengthening and maintenance of its nontolled national roads over the three years to 2021/22. It was also allocated R3.30-billion for the upgrade of the Moloto road, R1.80-billion to compensate for the lower tariffs from the Gauteng Freeway Improvement Project (GFIP), R3.20-billion for the construction of the Msikaba and Mtentu bridges as part of the N2 Wild Coast road (N2WCR), and R19.80-billion for general road strengthening and maintenance projects.

Sanral expects its expenditure will continue to increase and will average between R30-billion and R40-billion a year until 2030 and hopes its proposed new integrated funding strategy will help it meet those expenditures.

Meanwhile, Transport Minister Dr Blade Nzimande announced in February 2019 that R3.50-billion of investment, which forms part of government's Economic Stimulus and Recovery Plan, would be spent on three of Sanral's biggest projects – the N2WCR, which links KwaZulu-Natal and the Eastern Cape; the upgrade of the N3 in KwaZulu-Natal; and the upgrade of the Moloto road, which links Mpumalanga and Limpopo.

As part of the N2WCR, R976-million will be invested in the upgrade of 16.30 km of single carriageway between Lingeni and the Msikaba bridge; R1.10-billion in the upgrade of a 17.70 km single carriageway between the Msikaba and Mtentu bridges; and R835-million on the upgrade of 11.50 km of road between Kulumbe and the Umtanvuna river, which will include the upgrade of two bridges and two interchanges.

A further R13-billion will be invested in upgrading a section of the N3 between Cato Ridge, in Durban, and Pietermaritzburg. This project will include upgrading the EB Cloete interchange, adding more lanes between Cato Ridge and Camperdown and adding lanes between Camperdown and Lynnfield Park.

The notoriously dangerous Moloto road, meanwhile, will benefit from R3.30-billion of investment to ensure upgrades to the carriageway, various intersections and drainage along the road.

Meanwhile, to help maintain provincial roads, National Treasury has allocated R36.50-billion over the three years to 2021/22 for the resealing and rehabilitation of provincial roads as part of the provincial roads maintenance grant (PRMG).

A July 2018 news article published by Business Tech quoted Transport Minister Blade Nzimande as stating that the PRMG was sufficient to fund only about half of the investment needed by provinces to maintain roads. According to the news article, the Minister suggested that the PRMG and municipalities' own funding to undertake road maintenance would have to increase substantially over the medium to long term.

TOLL ROADS

Six per cent of the national road network is managed by three toll concessionaires – Trans Africa Concessions (TRAC), the N3 Toll Concession (N3TC) and the Bakwena Platinum Corridor Concessionaire. TRAC, which entered into a concession agreement with Sanral in 1997, manages the N4 eastward between Pretoria and Maputo, in Mozambique. Its concession will end in 2028.

N3TC entered into a concession agreement with Sanral in 1999 to manage the N3 between Cedara, in KwaZulu-Natal, and Heidelberg, in Gauteng, until 2029. Bakwena, which manages the N1 between Pretoria and Bela Bela, in Limpopo, and the N4 westwards from Pretoria to the Botswana border, has a concession agreement that is valid until 2031.

Each of the three companies are responsible for raising the required capital for road construction and the servicing of debt, as well as securing the funding needed for road upgrades, rehabilitation projects, road maintenance and operational costs.

The companies, however, retain the toll revenues earned. Sanral reported in its 'Integrated Report 2018' that the three concessionaires had earned a combined R4.69-billion in toll revenues during the 2017/18 financial year. They also invested about R1.57-billion in road improvement projects and about R101-million in road maintenance projects. Sanral also pointed out that TRAC, N3TC and Bakwena had each realised a net profit for the financial year.

Picture by Creamer Media

N3 Toll Concession

Electronic tolling

As part of the Gauteng Freeway Improvement Project, for which tolls are collected through an electronic toll (e-toll) collection system, the South African National Roads Agency Limited has established a national transaction clearing house for all toll payments.

It has been steadily expanding the system to enable all conventional toll plazas on the national road network to use e-toll collection, providing road users with an electronic tag, or e-tag, fitted to their vehicles with a cashless travel experience that also reduces congestion at toll plazas.

During the 2017/18 financial year, the last toll plaza was linked to the clearing house. This resulted in a 42% increase in the value of e-toll collection transactions at conventional toll plazas. E-tolling transactions at conventional toll plazas had also increased to 19% of overall toll collections.

Source: Sanral

Sanral also achieved a net profit of R541-million for its toll road portfolio for the financial year; however, this was mainly as a result of its having transferred funds from its nontoll portfolio to its toll road portfolio. Sanral noted that it had, for the first time, "found it necessary" in the 2017/18 financial year to transfer R1.67-billion from its nontoll portfolio to the toll road portfolio, as it needed to reduce losses as a result of the continued nonpayment of toll fees by many users of the GFIP. The funds transfer was in addition to the R406-million grant allocated to Sanral by the National Treasury for the financial year to offset lower income on the GFIP.

Transport Minister Dr Blade Nzimande announced in March 2019 that a further R5.70-billion had been transferred from the nontoll network to the toll network to ensure Sanral does not default on its debt payments to investors. *Engineering News* reported at the time that, if Sanral were to default on its debt payments, R45-billion of debt would immediately become due to the roads agency's investors.

Sanral has, since the start of the GFIP open-road tolling in 2013, faced significant opposition from road users to paying for using these roads.

Phase 1 of the GFIP, on which construction started in 2009, involved the upgrade of 185 km of highways in Gauteng. The project was aimed at reducing congestion on some of the busiest stretches of highway by increasing the number of lanes, as well as upgrading various interchanges. Sanral opted for open-road tolling for the GFIP, with the collected revenue to be used to upgrade road infrastructure, service debt incurred to upgrade the highways and maintain the highways.

In 2010, Electronic Toll Collection (ETC), which is owned by an Austrian company Kapsch, was established as a special purpose vehicle to roll out the open-road or electronic tolling (e-tolling) on the GFIP.

As part of the e-tolling system, toll gantries were installed along the upgraded GFIP highways to allow for e-toll fee transactions for road users with electronic tags (e-tags) fitted to their vehicles. Road users without e-tags are sent accounts to settle afterward. Road users expressed their opposition to the e-tolls, with many complaining of insufficient consultation, from as early as 2010, resulting in delays in its implementation until 2013.

Many dissatisfied roads users have, however, continued to refuse to fit e-tags to their vehicles or pay their toll accounts, resulting in significant revenue shortfalls for Sanral. Government eventually agreed to concessions regarding e-tolls, announcing a monthly cap on the amount road users could be charged for e-tolls. This resulted in the National Treasury having to pay Sanral a grant to offset the lost revenue as a result of the cap.

Most Gauteng road users have, nevertheless, remained adamant that they will not pay e-tolls on the GFIP. Civil society organisations like the Organisation Undoing Tax Abuse (Outa) have, for years, been calling for e-tolls to be scrapped, saying it is an unworkable system. The Gauteng provincial government agrees and has, on many occasions, raised the matter with national government, which has, as yet, refused to scrap the system, despite a low compliance rate of only 30%, and despite media reports that the country's ruling party, the African National Congress, has agreed to end the use of the system.

Amid the uncertainty about the future of e-tolling, Sanral announced in March 2019 that it would suspend its pursuit of recovering the outstanding e-toll fees while national government takes a decision on e-tolls. This announcement was, however, met with dismay from Finance Minister Tito Mboweni, who has been encouraging South Africans to pay their taxes. He said Sanral's decision was a bad choice that would negatively impact on Sanral's ability to not only raise funds in the bond market but also impact on its credit ratings, as well as those of government. South Africa's economy is in a difficult position and National Treasury has limited funding to spend on infrastructure.

Mboweni has, on several occasions, expressed his support of the user-pays principle for funding infrastructure.

Scrapping e-tolls is also not a simple matter, with ETC CEO Coenie Vermaak having told *Engineering News* in October

Picture by Creamer Media

GFIP toll gantry

2018 that, if the decision was taken to switch off the gantries, Sanral would have to make an immediate R45-billion debt repayment, which included interest, to Kapsch.

The resistance by Gauteng road users to pay their GFIP tolls has negatively impacted on Sanral's ability to roll out more open-road tolling projects in the country. The roads agency pointed out in its Horizon 2030 strategy that there are more than R120-billion worth of projects that would have been funded through tolls that can no longer be implemented, as a result of road users' reluctance to pay their toll fees. This has also resulted in Sanral's being unable to roll out further phases of its GFIP. Sanral had planned to eventually extend the GFIP to 560 km.

Sanral has warned in its Horizon 2030 strategy that, as a result of the resistance to paying toll fees, as well as budget shortages, critical national roads projects may not be undertaken in the medium to long term.

Meanwhile, ETC's contract for managing the e-toll system is nearing an end. The contract has been extended by one year to December 2019, but ETC is hoping it will secure a further extension to 2021. ETC told *Engineering News* in October 2018 that Sanral had started on a tender process for the contract. It remains to be seen, however, if this will proceed, given the uncertainty about the future of the e-tolling system. In the meantime, ETC is negotiating a possible empowerment transaction with a local partner to ensure it meets government's transformation requirements.

Sanral, meanwhile, believes its other directly managed toll projects have operated without difficulties, with the use of electronic tags, or e-tags, on these routes having increased.

Legal challenge

The South African National Roads Agency Limited (Sanral) and the Aveng Strabag joint venture (ASJV) are involved in a legal challenge over two bonds related to the Mtentu bridge contract. The ASJV submitted an application to the North Gauteng High Court in February 2019 for an order to prevent Sanral from making a call on the two bonds – a R245-million performance guarantee and an R82-million retention guarantee – until the parties can conclude a dispute over the terminated contract for the bridge's construction. The application was, however, dismissed by the court in March 2019. The ASJV plans to appeal the judgment.

Source: *Engineering News*

Besides the GFIP toll roads, Sanral also directly manages toll roads on sections of the N1 in the Western Cape, the Free State, Gauteng and Limpopo; a section of the R31 in the Free State; sections of the N2, in the Eastern Cape and KwaZulu-Natal; a short section of the N4 near Pretoria; the N17 between Gauteng and Mpumalanga; and the N1/N3 and the R21.

ROAD PROJECTS

Despite the funding challenges it faces, Sanral continues to invest in its road network, albeit at lower levels than in previous years. The roads agency reported in its 'Integrated Report 2018' that it had 223 capital projects, covering 848 km of roadway, in progress during 2017/18. The number of contracts issued during the year had, however, more than halved, to 60, compared with 172 in 2016/17, as a result of lower spending on projects, particularly within the toll portfolio, as a result of the funding challenges it faces.

The roads agency also attributed the decrease in the number of contracts awarded, in part, to a new trend in the construction industry, called "tender-jacking". Sanral explained that, in these instances, business interest groups near construction projects tried to coerce contractors to award them subcontracts without participating in tendering processes. This was accompanied not only by threats of violence but also damage to property and, in some cases, injury to persons on construction sites.

Various industry bodies expressed their concern about a so-called "construction mafia", in March 2019, which was involved in such practices and the impact this was having on the construction industry, including one of Sanral's biggest bridge contracts. The South African Forum of Civil Engineering Contractors (Safcec) has pleaded with Finance Minister Tito Mboweni and President Cyril Ramaphosa to intervene and assist in halting the antics of the "construction mafia", which it says is disrupting various projects valued at more than R25.50-billion. The Black Business Council in the Built Environment is reported to have also appealed to Police Minister General Bheki Cele to help resolve the situation.

The Association of South African Quantity Surveyors and the South African Council for the Project and Construction Management Professions have added their voices to the calls for various Ministers to intervene.

Safcec, meanwhile, highlighted that one of the highest profile contracts to be affected by the "construction mafia" was the R1.65-billion contract awarded to the Aveng Strabag joint venture (ASJV) to build the 1.13-km-long Mtentu bridge – a main-span cantilever bridge that will reach heights of 220 m. The ASJV terminated the contract to build the bridge, which forms part of the new N2 Wild Coast road (N2WCR), in the Eastern Cape, in February 2019, following continued violence on site since late 2018. *Engineering News* had reported in January 2019 that the ASJV had called force majeure at the project and had not returned to the construction site for the safety of its employees. Although Sanral sought to reach a negotiated settlement with all stakeholders, including ASJV and the entities that had disrupted the construction work, the ASJV believed the construction site was unsafe for its employees. Sanral disagreed and is seeking claims against the ASJV for having left the site.

Despite the difficulties, Sanral engineering executive Louw Kannemeyer expects the bridge will be built, but has acknowledged that it will face further delays. Once the legal challenges with the ASJV are finalised, Sanral will have to re-issue the tender for the project. The tender process will take months to complete and the new contractor will likely restart work on the project only in about 18 months' time.

Meanwhile, the other significant bridge project that is being built as part of the N2WCR is the 580-m-long Msikaba cable-stayed suspension bridge. Sanral awarded the R1.65-billion bridge contract to a joint venture between local construction firm Concor and international firm Mota-Engil in September 2018. Construction of the bridge, which will reach a height of 195 m, started in February 2019 and will be completed within 33 months. The two bridges are part of the 112 km greenfield section of the N2WCR, which is being upgraded to reduce travel times between Durban, in KwaZulu-Natal, and East London, in the Eastern Cape.

While Sanral had initially planned to fund the entire N2WCR project, which is estimated to cost about R9-billion, from toll funding, it later decided to adopt a hybrid funding model, with toll plazas to be implemented only along the new greenfield section of the N2 highway.

The Daily Maverick reported in February 2019 that the roads agency would fund the construction of the 112 km greenfield section between Ndwalane and the Mtambuna river from its nontoll budget, while future maintenance and upgrades of the sections would be funded from toll revenues. According to the news article, Sanral plans to gazette an intent to toll on the greenfield section of the road during 2019.

Further, Sanral revealed in April 2019 that the North Gauteng High Court had denied an appeal against an earlier court decision that confirmed the road agency's decision to proceed with the N2WCR. The earlier court judgment had determined that Sanral had met the public participation requirements for the N2WCR's environmental-impact-assessment process.

Meanwhile, Sanral also started work on the upgrade of an 87 km stretch of the N3 between Durban and Pietermaritzburg in 2018. Phase 1, which will result in upgrades to the road between Pietermaritzburg and Cato Ridge, will cost up to R24-billion, BusinessTech reported in March 2018.

Provinces and municipalities also continue to invest in road infrastructure and upgrades. The Gauteng provincial government is in the planning stages of its new PWV15 highway, which will run from east to west, compared with most highways in the province that run from north to south. The proposed highway is expected to relieve congestion at Gillooly's interchange, which carries a lot of traffic, and particularly trucks and freight vehicles, during the morning and afternoon peaks.

At a municipal level, one of the most significant projects in the City of Johannesburg is the repair of the M2 bridge between the Kaserne and Selby offramps. The Johannesburg Roads Agency (JRA) announced in February 2019 that the M2 motorway between the Crown interchange and Maritzburg street would be closed in both directions between February and October to allow for repairs to the bridge.

The road closure, which is having a significant impact on traffic, given how busy the M2 motorway is, was deemed necessary as a result of a lack of maintenance over many years, as well as the increasing traffic volumes on the motorway. The JRA has previously indicated that nearly 80% of bridges in the city need urgent rehabilitation

FREIGHT TRANSPORT BY ROAD

In South Africa, the majority of goods are still transported by road rather than rail. According to the Department of Transport's Green Transport Strategy for South Africa 2018 – 2050, published in August 2017, about 1.45-billion tonnes of goods were

Picture by Creamer Media

transported by road in 2015, compared with the 226-million tonnes of goods transported by rail.

The volume and weight of vehicles have a significant impact on the condition of the country's roads, while there are also cost and environmental factors to consider.

Government continues to encourage the shift to transport more freight on rail rather than by road. It notes in a draft Roads Policy, published for public comment in March 2018, that freight efficiencies have to improve and that there should be a better balance between rail and road freight transportation to reduce the deterioration of the country's roads.

The policy document outlines that the Department of Transport will create a framework to align the market cost with the true cost of road freight to ensure that costs are commensurate with the impact of road freight activities on the road network. Further, the department intends to establish a single transport economic regulator to oversee pricing in the road freight industry. To further curb the impact of road freight on the country's roads, the department will enforce measures to eliminate the overloading of trucks.

The policy document states that the integration of modes of transport for freight is essential and the department will work to strengthen logistics corridors and links to promote intermodalism.

PASSENGER TRANSPORT BY ROAD

The minibus taxi industry

There are about 200 000 minibus taxis providing transport services for commuters in South Africa. This mode of transport remains the most affordable means for many, mainly the poorest in the country, to travel to work and school.

Despite its popularity as a mode of transport, safety remains a concern for government, as well as for commuters using minibus taxis. To address this, the Department of Transport implemented the Taxi Recapitalisation Programme (TRP) in 2006 to remove, by means of an allowance to owners, 135 000 of these vehicles from the country's roads and replace them with newer and safer vehicles. Although the overall target had not been met, about 70 000 minibus taxis had been scrapped and replaced with safer vehicles by the end of 2017.

Transport Minister Dr Blade Nzimande unveiled the department's Revised Taxi Recapitalisation Programme (RTRP) in April 2019, as part of interventions to transform the minibus taxi industry.

The RTRP is aimed at scrapping the remainder of the 135 000 minibus taxis initially targeted under the TRP. *Engineering News* reported that while the minimum requirements for application to scrap old taxis remains the same as under the TRP, the department has increased the scrapping allowance from the R91 100 offered under the TRP to R124 000. The increase is meant to address concerns that the previous allowance was insufficient for the replacement of old vehicles.

Engineering News further reported that the RTRP would also focus on elements other than just the scrapping of old taxis, such as commercially viable enterprises, including the supply of new taxi vehicles, vehicle finance, short-term insurance, spare parts, repairs, fuel, lubricants and electronic fare collection solutions. The revenue generated from these enterprises will then be used to fund the continued recapitalisation of ageing vehicles beyond the RTRP.

The department has appointed service provider Anthus Services 84 to manage the RTRP. Anthus has, in turn, established Taxi Recapitalisation South Africa (TRSA) as the trading entity that will implement the RTRP. Sixty per cent of the commercial benefits generated by TRSA will be transferred to the minibus taxi industry to facilitate the transformation of the industry.

As part of measures to transform the industry, the department intends to undertake a nationwide survey to assess the extent of illegal taxi operations and compile a database of minibus taxi operators. *Engineering News* reported that the department expects this data to help it ensure proper planning and to implement appropriate interventions.

Nzimande further indicated that the RTRP would contribute to changes in the operating model currently used by the taxi industry, which entails individual taxi ownership and a collaborative route management structure through various taxi associations and councils. The Minister believes this operating model is a significant contributor to violence in the industry.

Provincial and national authorities have, on several occasions in recent years, temporarily closed certain taxi ranks and halted taxi operations on certain routes in response to violence between competing taxi industry members.

There have been many instances where taxi drivers or their bosses have been gunned down by rival operators. This is not only a risk to those working in the industry, but also to commuters caught up in the taxi violence.

He suggested that the RTRP would seek to introduce collaborative ownership and operating models through cooperatives and the corporatisation of the industry. Nzimande explained that this would ensure secure employment with benefits for those working in the industry, while also eliminating competition among taxi drivers and increasing passenger safety.

The Public Protector, meanwhile, released a report in March 2019 that blamed the Department of Transport and Toyota South Africa for failing to protect taxi commuters. The Public Protector's offices had investigated allegations that, until March 2018, more than 2 300 Toyota Quantum panel vans had been illegally altered for use as minibus taxis.

Online publication News24 reported in March 2019 that the Public Protector had said that the department had delayed rectifying the matter, while Toyota had only informed its dealerships of the conversion of the panel vans, without taking further steps to prevent such conversions. The news article also noted that the investigation had found that the National Regulator for Compulsory Specifications had failed to ensure all minibus taxis complied with the compulsory specifications.

The publication reported, however, that the department has since removed 1 986 illegally converted panel vans from operating on the country's roads.

In response to the release of the Public Protector's findings, the department said it had, when made aware of the illegal conversion of the panel vans, informed the relevant law enforcement agencies to impound illegally converted vehicles.

It further stated that the Special Investigation Unit was investigating allegations of fraud and the manipulation of the department's Electronic National Administration Traffic Information System against licensing office staff.

The department further assured stakeholders that it had already established systems to implement the remedial measures set out by the Public Protector. These measures included that the department update its records of the illegally converted vehicles to ensure their removal from the country's roads.

Further, *Engineering News* reported in April 2019 that TRSA had already started to scrap some of these illegally converted vehicles. While 436 of the panel vans had been retrofitted, 1 917 would be scrapped, with the owners to receive an allowance if they have a valid operating licence permit.

Meanwhile, the taxi industry has, for many years, called on government to introduce subsidies for the industry, similar to those offered to other modes of public transport, such as buses and trains. This was again reiterated by the South African National Taxi Council during the Competition Commission's June 2018 market inquiry into land-based public transport.

Independent public transport expert Paul Browning, however, told the commission that it was difficult to subsidise the taxi industry, given its informal nature, with limited accounting systems and payment records.

In another development, Gauteng Roads and Transport MEC Dr Ismail Vadi suggested in March 2019 that the minibus taxi industry should be corporatised. *Engineering News* quoted the MEC as saying that it would be useful for taxi operators to establish cooperatives to improve customer satisfaction and profitability, as well as improve the work conditions of taxi drivers.

The commuter bus industry

There are about 25 000 buses operating in South Africa, with 19 000 used for public transport and the remainder for in-house purposes. Traditional bus services, which compete with the minibus taxi industry, are facing difficult financial times, despite receiving subsidies from government.

Also, in recent years, municipalities have opted to invest in the establishment of bus-rapid transit (BRT) systems.

The BRT systems form part of government's investment in integrated public transport networks (IPTN). The National Treasury allocated R22.30-billion through the public transport network grant to fund IPTNs in 13 cities across South Africa in the three years to 2021/22.

BRT systems are established, or under way, in Ekurhuleni and Johannesburg, in Gauteng; in Rustenburg, in the North West; in eThekwini, in KwaZulu-Natal; in Nelson Mandela Bay, in the Eastern Cape; and in Cape Town, in the Western Cape.

Government has been encouraging citizens to increase their use of public transport, but many people continue to use their private vehicles to travel to and from work.

Picture by Creamer Media

Government has been encouraging citizens to increase their use of public transport, but many people continue to use their private vehicles to travel to and from work

Engineering News reported in July 2018 that high capital costs and subsidies, along with low ridership figures, have contributed to questions about the viability of BRT systems in South Africa.

Department of Transport public transport policies director Ibrahim Seedat told the publication that the MyCiti BRT system in Cape Town was, to date, probably the most successful of the various systems, with ridership figures of 75 000 a day. He lamented that there was no urgency in the country for people to give up their private vehicles and move to public transport.

The publication further quoted University of Pretoria Centre of Transport Development associate professor Christo Venter as stating that BRT systems carried only about 2% of public transport passengers, compared with the 67% of passengers transported by minibus taxis and 22% by commuter rail.

He explained that South Africa's low urban density was one of the biggest challenges to rolling out successful BRT systems. This meant that there were larger numbers of passengers at peak times, but that BRT buses had to travel longer distances and had few passengers throughout the remainder of the day.

Engineering News reported in July 2018 that the National Treasury was now expecting all cities with IPTNs to update those plans and ensure those plans incorporate other modes of transport, including rail and taxi services to improve the viability of public transport.

In general, South Africa needs better coordination of its various public transport systems if it is to attract more users.


Picture by Creamer Media

RAIL INFRASTRUCTURE IN SOUTH AFRICA

According to the Department of Transport's (DoT's) National Rail Policy Draft White Paper, South Africa's rail network comprises about 22 387 route kilometres, which comprises a national network of 12 801 km, 7 278 km of branch lines, a narrow gauge urban network of 2 228 km and an 80 km standard gauge regional rapid transit network.

The country has three main railway operators – State-owned Transnet, the State-owned Passenger Rail Agency of South Africa (PRASA) and the Gautrain Management Agency (GMA). Transnet subsidiary Transnet Freight Rail (TFR) operates the long-distance rail network while providing access to PRASA's long-distance rail services – Shosholoza Meyl and Premier Classe. PRASA also operates the Metrorail urban commuter service and owns bus operator Autopax Passenger Services. The GMA operates the Gautrain rapid rail network, in Gauteng.

There are also about 250 small operators that use railways that are integrated into industrial and mining production or that operate tourism-related activities, such as heritage tours, besides others.

The DoT points out in the White Paper that South Africa's rail system is not performing at the levels it should be, with its market share for general freight at only about 20% and for passengers at only about 10%. It further states that the country's rail industry faces many challenges, including inadequate funding, ageing infrastructure, deteriorating rolling stock and the limitations of narrow gauge, which have contributed to uncompetitive and operationally inefficient railways.

Most rail networks worldwide have transitioned to 1 435 mm standard gauge, while South Africa still uses the 1 067 mm narrow, or Cape, gauge, which is better suited to urban rail networks than long-haul rail networks.

The White Paper sets out government's intention to drive the development of a standard gauge high-performance national rail network. The DoT expects that the national long-distance rail network will, by 2050, be mostly standard gauge, while the narrow gauge rail services will be confined to urban areas.

This will, however, require significant investment, which State-owned Transnet and PRASA are unlikely to be able to contribute by then. Government has, therefore, suggested that the private sector be involved in funding the required infrastructure.

FREIGHT TRANSPORT BY RAIL

Transnet subsidiary TFR operates the only long-distance rail network – comprising about 30 400 km of rail track – in South Africa. This includes heavy haul coal and iron-ore export lines. It also transports bulk, breakbulk and containerised freight.

To mitigate the historical underinvestment in South Africa's transport infrastructure, Transnet embarked on its seven-year Market Demand Strategy (MDS) in 2012 to create capacity ahead of demand.

As part of the MDS, Transnet set out to become a significant thermal coal and manganese exporter, while maintaining its position as one of the largest iron-ore suppliers to China.

Transnet had invested about R165.80-billion in capital expenditure (capex) between 2013 and 2018, with peak yearly capex of R34-billion reached in 2015. This was followed by further capex spend of R29.80-billion in 2016, R21.40-billion in 2017 and R21.90-billion in 2018.

Transnet expects to invest a further R163.70-billion in expanding and maintaining its infrastructure over the next five years.

As part of the MDS investment, Transnet has entered into contracts to acquire 1 319 new locomotives for TFR's general freight business (GFB) and its coal business. The biggest contract entails the procurement of 1 064 locomotives – 599 electric and 465 diesel – from four original-equipment manufacturers (OEMs) – GE, China North Rail (CNR), China South Rail (CSR) and Bombardier Transportation – for the GFB.

The contracts for the 1 064 locomotives have, however, attracted a lot of scrutiny, with allegations of State capture and corruption bringing some of the contracts into question.

The National Treasury pointed out in its Budget Review, published in February 2019, that Transnet's procurement controls had broken down, with forensic specialists having been appointed by the group to review the contracts for the procurement of the locomotives. Transnet appointed Werksmans Attorneys in July 2017 to investigate allegations of corruption related to the acquisition of the locomotives.

Bloomberg reported in June 2018 that the law firm had determined that Transnet had altered the terms of some of the agreements to procure the 1 064 locomotives and that it had, in the process, wasted billions of rands and breached various statutes, regulations and corporate governance rules. Bloomberg stated that the Transnet board, which has since been replaced with a new board, had, in 2014, agreed to pay R38.60-billion to the four OEMs for the locomotives; however, the delivery schedule for the locomotives had been accelerated and the cost of the locomotives increased to R54.50-billion. The news report pointed out that Werksmans Attorneys' report had found no evidence that the National Treasury or the Department of Public Enterprises, which oversees Transnet, had approved the changes to the terms of the agreements. According to the news article, the law firm had further determined that the increased costs were inexplicable and excessive. The law firm recommended that a further inquiry be held into the matter.


Picture by Creamer Media

Transnet plans to invest an estimated R163.70-billion in expanding and maintaining its infrastructure over the next five years

Appointment

Transnet Engineering appointed Thoba Majoka acting chief officer for advanced manufacturing in September 2018. He succeeded Thamsanqa Jiyane, who was fired after having been implicated in alleged corruption related to the awarding of tenders for the acquisition of 1 064 locomotives from various OEMs.

Source: *Engineering News*

In November 2018, the National Treasury released a report with the findings of a forensic investigation undertaken by forensic audit firm Fundudzi Forensic Services, on behalf of the Treasury, particularly into the procurement of locomotives by Transnet from CSR. This included the procurement of 359 electric locomotives as part of the 1 064 programme, as well as the 2011 procurement of 95 electric locomotives for TFR's GFB for delivery between April 2014 and February 2015, and the 2013 procurement of 100 electric locomotives for TFR's coal line.

The audit firm also considered the roles McKinsey & Company, Regiments Capital and Trillian Capital Partners, companies with links to the controversial Gupta family, might have played in the procurement of the locomotives.

Former Public Enterprises Minister Malusi Gigaba was identified, along with various former Transnet executives, including former CEOs Brian Molefe and Siyabonga Gama, as having played a role in the alleged tender irregularities pertaining to the procurement of locomotives from CSR. The parties have on various occasions disputed any wrongdoing on their part.

Engineering News reported in January 2019 that, in light of the findings of the National Treasury report, Transnet planned to review the agreements with three of the four OEMs selected to supply the 1 064 locomotives and that it would try to recoup the additional funds paid to suppliers for contracts that were inflated as a result of corruption.

The news article pointed out that Transnet planned, as part of a review of the 1 064 programme, to reduce the number of locomotives to be procured to 953 by 2025, compared with the previously planned 1 064, owing to changes in its expected transport volumes.

GE had, however, by the end of the 2018 calendar year, delivered 233 diesel locomotives it had been contracted to supply and its contract can, therefore, not be amended. CSR had delivered 203 of the 359 electric locomotives it had been contracted to supply, CNR 21 of the 232 it had been contracted to supply and Bombardier 25 of the 240 it had been contracted to supply.

Engineering News quoted Transnet chairperson Dr Popo Molefe as stating that TFR would institute penalties for any late deliveries by any of the OEMs, as well as for those OEMs that had not met localisation requirements as set out in their contracts.

News provider News24 had reported in March 2018 that CSR had asked the Department of Trade and Industry (DTI) to exempt it from its R5-billion local-content commitments under the 1 064 programme, but that the DTI had denied CSR's request and instead recommended that it intensify efforts to find suitable local suppliers to ensure it met its local-content commitments.

Engineering News further reported in January 2019 that Transnet would pursue civil claims to recover R1.30-billion from companies and individuals that might have benefited from the alleged corruption. Criminal cases were also being pursued against some of the entities and persons identified in the National Treasury's forensic report. The news article further noted that Transnet was seeking to recover money from Regiments Capital and McKinsey with regard to the locomotive contracts.

The publication further reported in April 2019 that Transnet would meet with the OEMs during April and May to negotiate settlement agreements. *Engineering News* pointed out that while Transnet considered the contracts to be irregular and unlawful, allowing it to terminate the contracts, the State-owned entity did not want to enter into protracted legal disputes with the OEMs and would, therefore, rather try to reach a negotiated settlement agreement.

Meanwhile, Transnet pointed out in its 'Integrated Annual Report 2018' that its planned 30-year rail infrastructure investment would amount to R167-billion, while its planned 30-year rolling stock infrastructure investment would amount to R283-billion.

As part of TFR's ongoing rolling stock investment, it spent R1-billion in the 2018 financial year, ended March 31, 2018, on the acquisition of new containers and wagons for various of its business divisions. TFR has partnered with another Transnet subsidiary Transnet Engineering (TE) to build 2 500 coal containers to service power utility Eskom's power stations; 300 new wagons for the iron-ore business; 86 new wagons for the automotive business; and 364 wagons to be used within the mining industry to transport ore from miners' shafts to their processing plants, as well as for servicing the automotive market. The investment resulted in TFR's taking delivery of 1 250 coal containers and 682 wagons.

Further, a key aim of the MDS was to transfer more rail-friendly cargo from road back onto rail to lower the cost of doing business in South Africa, improve efficiencies and lower the country's transport-related carbon emissions.

Transnet noted in its 'Integrated Report 2018' that its road-to-rail efforts had yielded 147 661 off-road trips, amounting to about 178-million kilometres. This represents about 1 335 trucks having been permanently removed from the country's roads.

During 2018, TFR had signed a new ten-year agreement with diversified miner Exxaro Resources for the transportation of 7.60-million tonnes a year of coal from the Waterberg, in Limpopo. Other significant agreements signed include the transportation of eight-million tonnes a year of magnetite from Palabora Mining Company's copper mine also in Limpopo, and the transportation of 600 000 t/y of manganese from the Kalagadi manganese mine, in the Northern Cape.

Further, it has increased the volume of chrome transported by rail by 1.80-million tonnes a year, while increasing the number of containers transported by rail by 75 000 twenty-foot equivalent units. An additional 530 000 t/y of steel is also being transported by rail, rather than road.

Meanwhile, Transnet further pointed out in its 'Integrated Report 2018' that the group had, through the MDS, created the necessary capacity ahead of demand, as planned, but that commodity growth and associated volumes had not yet reached the anticipated levels.

The coal export line

Transnet's coal line is used to transport coal from mines in the Waterberg, in Limpopo, and the Highveld region of Mpumalanga, to the Richards Bay Coal Terminal (RBCT), in KwaZulu-Natal, for export.

During the 2018 financial year, export coal volumes transported along the rail line increased to a record 77-million tonnes (2017: 73.80-million). This exceeded the targeted 76-million tonnes, as well as the previous record of 76.20-million tonnes achieved in 2015. Export coal volumes for the first half of the 2019 financial year, ended September 30, 2018, however, decreased by 5.60% year-on-year to 35.70-million tonnes, compared with the 37.80-million tonnes railed in the first half of the prior financial year. Volumes were also 2.30-million tonnes lower than TFR had targeted.

TFR attributed the lower volumes to community unrest that led to the intermittent closure of the export coal rail line, in KwaZulu-Natal; locomotive challenges and failures; customer-related challenges; weather-related constraints at the RBCT; and the loss of volumes from the Optimum coal mine, as a result of that operation having gone into business rescue.

TFR invested R172-million in coal line infrastructure during the 2018 financial year, with R113-million invested in infrastructure needed to export coal from the Waterberg and R59-million for the Coal 81 programme, which is aimed at increasing the capacity of the coal rail line to 81-million tonnes a year. The expansion to 81-million tonnes a year was 80.10% complete as at March 31, 2018.

Transnet reported in its 'Integrated Annual Report 2018' that it had already invested R2.80-billion on expanding the capacity of the coal export line to 81-million tonnes a year. This included investment of R55-million for the upgrade of yards, lines and electrical equipment during the 2018 financial year.

To unlock the potential of coal mines in the Waterberg region, TFR is considering options to potentially expand the capacity of the Waterberg section of the coal rail line to 24-million tonnes a year. The Waterberg section is being developed in stages, with the Stage 1 capacity of two-million tonnes a year already implemented. Stage 2 will result in an increase in the section's capacity to 6.30-million tonnes a year.

Transnet stated in its 'Integrated Annual Report 2018' that it had already invested R164-million in the project since inception, including an investment of R98-million during the 2018 financial year.

TFR is also undertaking feasibility studies into Stage 3, 4 and 5 and plans to eventually increase capacity to 24-million tonnes a year.

The iron-ore export line

TFR transports iron-ore for export along an 861 km heavy-haul rail line between Sishen, in the Northern Cape, and Saldanha Bay, in the Western Cape.

During the 2018 financial year, extreme weather resulted in some delays to operations along the rail line. Nevertheless, volumes increased by 2.30% to 58.50-million tonnes, compared with the 57.20-million tonnes railed in the 2017 financial year.

Volumes also increased by 3.10% year-on-year to 30.20-million tonnes for the six months ended September 30, 2018, compared with the 29.30-million tonnes railed in the six months to September 30, 2017, as a result of efficiency improvements and improved customer demand from established and emerging miners.

TFR is investing in the upgrade of power supply on the rail line, including upgrades to four Eskom substations, as well as new distribution lines and related infrastructure. These upgrades are scheduled for completion in early 2020.

The manganese export line

Given the significance of South Africa's manganese reserves, which account for 75% of global reserves, TFR is developing its manganese export corridor into its third heavy-haul rail line. By the end of its 2018 financial year, it had invested R2.10-billion on the project since inception, including R212-million that was invested during the financial year.

TFR has expanded its manganese export capacity from about five-million tonnes in 2012 to more than 13-million tonnes by mid-2018. During the 2018 financial year, TFR transported 13.70-million tonnes of manganese, 13.50% higher than the 12.10-million tonnes transported in the prior financial year and 23.70% higher than its targeted volumes.

Manganese volumes for the six-month period to September 30, 2018, increased by 4.40% year-on-year to 7.10-million tonnes, compared with the 6.80-million tonnes transported in the six months to September 30, 2017.

Transnet expects its manganese export capacity allocation (Meca) contracts to result in 12.50-million tonnes a year of manganese being transported from Hotazel, in the Northern Cape, along the Saldanha Bay and Port Elizabeth railway lines for export.

Transnet's manganese expansion programme also involves the refurbishment of the rail network between Hotazel and Coega, in the Eastern Cape, in addition to the construction of a new bulk terminal at the Port of Ngqura. Transnet has also developed a hybrid bulk and container solution that was implemented at the inland NewCon manganese terminal, in Newcastle, in KwaZulu-Natal. The solution allows for trains to transport manganese from the Northern Cape to the NewCon Terminal, where open-top container trains are loaded to transport the manganese to the Port of Durban.

Transnet signed a seven-and-a-half-year Meca contract with diversified miner South32 in March 2018 to transport 2.60-million tonnes a year of manganese to port for export.

This was followed by the signing of a similar seven-and-a-half-year Meca contract with Assmang in July 2018.

Meca contracts provide security of export manganese volumes for Transnet while providing security of export rail and port logistics capacity for clients. *Engineering News* reported in March 2018 that Transnet is, as part of the Meca process, allocating 15% of capacity to new entrants in the manganese export market, such as Kalahari Resources' Kalagadi mine, in the Northern Cape, which exports about 600 000 t/y of manganese.

The general freight business

The GFB business transports containerised cargo; coal, iron-ore and manganese for the local market; agricultural products; iron and steel; fertilisers; cement; bulk liquids; and automotive products, besides others.

During the 2018 financial year, general freight tonnages increased by 3.10% to 90.77-million tonnes, compared with 88.10-million tonnes in the prior financial year.

Among the contributors to this increase were nonferrous metals, which increased to 2.80-million tonnes, compared with the targeted 1.30-million tonnes; and containers and automotive, which increased to 9.80-million tonnes, compared with the targeted 9-million tonnes.

However, as a result of South Africa's weak economic growth, general freight tonnages decreased to 43.30-million tonnes in the six months ended September 30, 2018, compared with the 46.50-million tonnes transported in the six months ended September 30, 2017.

While the domestic transport of chrome and manganese, as well as containers, automotive products and timber, showed some growth in the six-month period, domestic coal, mineral mining, magnetite, fuel and petroleum product, fertiliser, as well as chemicals, cement and lime volumes all decreased.

Meanwhile, Transnet noted in its 'Integrated Annual Report 2018' that freight volumes are forecast to increase to about 137.10-million tonnes a year by 2025.

Future growth

Transnet believes it has closed the capacity gap in freight logistics infrastructure demand and is now focusing its attention on its new Transnet 4.0 strategy, which is aimed at helping the group prepare for the Fourth Industrial Revolution and the resultant future growth opportunities.

Three major growth areas have been identified under the Transnet 4.0 strategy. Firstly, the group plans to accelerate its expansion in the rest of Africa, the Middle East and Asia.

Secondly, Transnet plans to position itself as a fully integrated logistics service provider that offers end-to-end solutions to key partners.

Lastly, the group aims to establish an advanced manufacturing capability as an OEM for Africa in rail, ports and transport.

In terms of its manufacturing capability, Transnet launched its diesel-powered TransAfrica Locomotive in April 2017, which is suitable for use on branch lines, in the yard for shunting, as well as for use on old rail tracks designed to carry light-axle

New acting CEO

Transnet announced in May 2019 the appointment of Mohammed Mahomedy as acting CEO. The State-owned group's board had decided not to extend Tau Morwe's contract as acting CEO beyond May 3. Prior to Mahomedy's appointment as acting CEO, he had served as acting CFO at Transnet for 12 months.

Further, with effect from May 13, Transnet has appointed Mark Gregg-Macdonald acting CFO. He will also serve on the company's board.

The group plans to fill executive level vacancies, including that of CEO in the coming months.

Mohammed Mahomedy

Mark Gregg-Macdonald

Source: *Engineering News*

loads. The locomotive is suitable for use on the narrow, or Cape gauge, railway lines that are operational across Africa.

Further, Transnet and its subsidiaries have also developed an autonomous prototype special inspection device (SID) that can be used to detect obstacles such as livestock or humans on railway tracks, defects on the track in front of trains and cable theft or overhead traction issues.

The SID, which is in the testing phase, was developed in collaboration with the Council for Scientific and Industrial Research. Transnet plans to industrialise the SID and introduce it to other rail operators.

PASSENGER TRANSPORT BY RAIL

Passenger Rail Agency of South Africa

The Passenger Rail Agency of South Africa (PRASA) is mandated to provide commuter rail services in South Africa, but also operates a commuter bus service. The State-owned entity (SOE) comprises three divisions – PRASA Rail, PRASA Corporate Real Estate Solutions (Cres) and PRASA Technical (Tech). Its subsidiaries are Autopax Passenger Services and Intersite.

PRASA Rail, which is the largest of the entity's divisions, operates Metrorail and Main Line Passenger Services (MLPS).

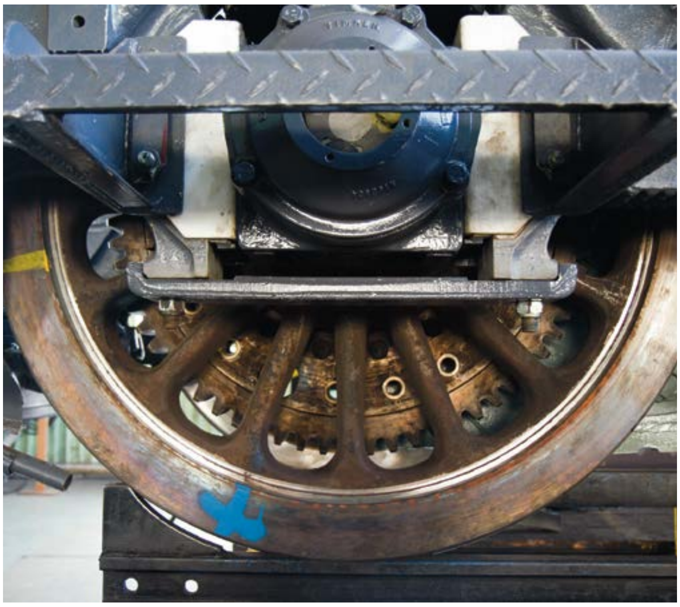
Metrorail provides commuter rail transport in the Gauteng, Cape Town, eThekwini, Port Elizabeth and East London metropolitan areas, while MLPS, which includes Shosholoza Meyl and Premier Classe, provides commuter rail transport between various cities in the country.

PRASA Cres is tasked with managing the SOE's property portfolio, while PRASA Tech is tasked with improving and modernising the SOE's existing rolling stock, as well as modernising the agency's depots and other strategic infrastructure, including perway, electrical substations, telecommunications systems and platforms, besides others.

PRASA's Autopax subsidiary, which has a fleet of more than 500 buses, provides road transportation for passengers under the luxury Translux brand and the semiluxury City to City brand.

Its Intersite subsidiary, meanwhile, is focused on the growth of the agency's property portfolio and investments, and pursues developments that it believes will harness transit-oriented growth for PRASA.

In its 'MTEF Corporate Plan 2020 – 2022', PRASA outlines



Picture by Creamer Media

PRASA expects to have a "massive" shortfall of R6.70-billion by the end of the first year of the medium-term expenditure framework – 2019/20

the various challenges it is facing, including the delivery of an unreliable service, increasing operating costs and a weak operating model and governance structure. The SOE attributes these challenges to years of underinvestment.

It further points out that Metrorail's asset performance is negatively impacted on by above-inflation cost increases, while the revenue per passenger remains unchanged.

Simultaneously, the PRASA Rail division is also subject to a significant loss of fare revenue as a result of fare evasion, the unavailability of rolling stock and other infrastructure, and the high cost of network access paid to Transnet for the MLPS business.

PRASA expects to have a "massive" cash shortfall of R6.70-billion by the end of the first year of the medium-term expenditure framework (MTEF) – 2019/20 – and this will increase to an estimated R12.80-billion by the end of the MTEF – 2021/22 – as a result of an increasing salary bill, rising utility costs, debt owed to Transnet and low subsidisation of the MLPS business. It points out that its operating costs are increasing at a higher rate than revenue generated and income from government subsidies.

PRASA has noted that its rail operations are labour-intensive in nature, which has resulted in an increase in personnel numbers and related costs, without service levels and revenue having increased.

Projected Metrorail business targets				
	2018/19 (f)	2019/20	2020/21	2021/22
Passenger trips	213-million	246-million	270-million	314-million
Fare revenue	R929-million	R1.08-billion	R1.40-billion	R1.89-billion
Cost recovery	16%	15%	18%	23%

Source: PRASA MTEF Corporate Plan 2020 – 2022
f – forecast

The significant personnel costs mean that limited funding can be made available to cover other costs such as energy and security.

It further notes that rail subsidies increase by less than inflation, while its actual costs to operate the rail business incurs above-inflation increases, resulting in a deficit of funds.

Also, PRASA's capital programme contributes to further maintenance and other costs that have to be covered under operating expenditure (opex), but are not funded through further increases in the subsidies received from government.

The SOE further points out that much of its cost base is fixed, with certain operating costs, such as electricity and security costs, subject to regulatory approval.

To deal with the various financial and operational challenges it faces, the SOE embarked on a turnaround plan in 2017. This has since been changed to a rescue plan, titled Get On Track, to halt the decline in its business performance, ensure that commuter and passenger services are reliable and safe, and that organisational inefficiencies are resolved.

As Metrorail accounts for about 60% of the SOE's expenditure, the group will focus its efforts on turning around this part of the business, as this is expected to make the biggest impact on overall group performance. PRASA expects it will need to invest about R6.60-billion in capex and opex to improve the reliability and availability of rolling stock and other infrastructure over a five-year period.

It further anticipates that the successful implementation of the rescue plan interventions should, during the MTEF period, result in a 1% month-on-month decrease in trains delayed and cancelled; an increase in rolling stock availability to 260 trains in 2019/20 and to 285 trains in 2021/22; a 12% reduction in safety incidents; and an increase in customer satisfaction to 81%. PRASA hopes to implement a 6% fare increase in 2021/22, when the overall commuter rail service is expected to have improved.

PRASA warns that its revenue has been on a downward trend for a number of years and that the failure to successfully implement the rescue plan will result in a cumulative loss of R1.80-billion by 2023/24.

Improving the safety and security of people, its assets and its infrastructure is important to the rescue efforts of the rail business. PRASA estimates it will need to invest about R8.50-billion in capex and opex over the next five years to ensure the safety of people and its assets. That expenditure is expected to result in a R3.90-billion reduction in costs, as well as a R516-million increase in revenue because of the reduction in fare evasion and an increase in rental income.

Without the R8.50-billion investment, operational costs are expected to increase by about R2-billion over the next five years as a result of higher maintenance costs and insurance premiums.

The rescue plan is aimed at improving Metrorail's service levels, which are currently below 50% of that achieved in 2008/9, to 65% of that achieved in 2008/9 during 2019/20 and to 80% of service levels achieved in 2008/9 by 2021/22.

PRASA also expects to increase the number of passenger trips, increase fare revenue and improve cost recovery over the MTEF period to 2021/22.

The difficulties faced by commuters using PRASA's Metrorail system were brought to the attention of President Cyril Ramaphosa in March 2019 when he got stuck on a Metrorail train in Pretoria. The planned 45-minute journey was delayed by three hours. He has since held negotiations with Transport Minister Dr Blade Nzimande to try to find resolutions to the matter.

Transport Minister Dr Blade Nzimande conceded in April 2019 that plans to turn the entity around had failed. News publication Business Day reported at the time that the Minister had announced a two-stage plan to try to get the entity back on track.

The first stage entailed the appointment of a task team of experts to assess the problems faced by PRASA over a two-month period. The task team would be expected to present the Minister with a report of its findings, which would serve as the basis for the

Projected MLPS business targets				
	2018/19 (f)	2019/20	2020/21	2021/22
Train trips	1 840	1 987	2 062	2 140
Passenger numbers	375 000	463 000	510 000	561 000
Fare revenue	R114-million	R141-million	R155-million	R170-million
Cost coverage	14%	15%	15%	16%

Source: PRASA Corporate Plan 2019/20 – 2021/22
f – forecast

appointment of a turnaround execution team that would report to the Minister and the PRASA board.

Meanwhile, there is also work to be done to improve passenger numbers and the performance of the MLPS business over the MTEF period. PRASA's rescue plan for MLPS will focus on restoring services on popular routes, improving the online booking system of the MLPS business and prioritising motor vehicle carrier coaches on key routes.

PRASA further plans to lease 12 locomotives to improve the reliability of the service while considering how to redefine the speed and comfort requirements of long-distance passenger travel.

PRASA has indicated that MLPS passenger numbers have decreased from 3.80-million when the business was transferred to PRASA from Transnet in 2008/9, to an estimated 375 000 in 2018/19. Trains operated by the business have also decreased from 6 750 to 1 800 over the same period.

The SOE plans to improve the MLPS to 30% of its 2008/9 performance over the MTEF period to 2021/22.

Rail modernisation programme

PRASA continues to progress its R173-billion modernisation programme, which is being implemented over a ten-year period until 2023.

The programme comprises a rolling stock fleet renewal programme, perway improvements, a signalling programme, depot modernisation and station modernisation.

PRASA has identified the need to appoint technical and project managers to accelerate modernisation programme projects. It expects to have the necessary appointments to be completed by the first quarter of the 2019/20 financial year.

The rolling stock fleet renewal programme will be rolled out over a 20-year period. PRASA expects to procure about 7 224 new coaches at a projected cost of about R123.50-billion over that period.

In the first phase, it has awarded a contract to the Gibela Rail Transport Consortium, which includes French multinational Alstom, to manufacture about 3 600 new coaches, representing about 600 new train sets, for Metrorail. The R59-billion contract will be delivered over 15 years and includes an agreement for technical support and spares supply for the trains over a 19-year period.

The first 20 of the X'trapolis Mega trains were manufactured at Alstom's factory, in Brazil, while the remainder will be manufactured at a new plant built in Dunnottar, in Gauteng. President Cyril Ramaphosa officially opened the R1-billion manufacturing plant, which will produce about 62 trains a year for ten years, in October 2018.

Along with the manufacturing plant, the Gibela facility also includes a supplier park and a rail training school that will allow for the transfer of skills. *Engineering News* reported in October 2018 that Gibela is sourcing materials, parts and services from about 71 local suppliers to meet the 65% local-content requirement, as set out in its contract with PRASA. Gibela delivered the first locally built X'trapolis Mega train to PRASA in December 2018.

Meanwhile, PRASA also sought to acquire new locomotives for its MLPS service in 2013. It entered into a R3.50-billion contract with Swifambo Rail Leasing for the supply of 70 new Afro 4000 locomotives – 50 diesel and 20 hybrid – manufactured by Spanish firm Vossloh España. However, after the first of the locomotives arrived in South Africa, it was found that they were too tall to operate on parts of PRASA's network.

Ultimately, Swifambo delivered only 13 of the 70 locomotives and had received payment of about R2.60-billion.

In 2017, a newly appointed PRASA board, headed by chairperson at the time Popo Molefe, who has since been appointed

Gautrain passenger trips		
Service type	**2017/18**	**2016/17**
Rail	15.02-million	15.61-million
Bus	4.80-million	5.13-million

Source: Compiled from Gautrain Management Agency Annual Report 2018

chairperson of Transnet, sought to have the money paid to Swifambo returned to PRASA. According to a November 2018 news article by news agency News24, the board determined that Swifambo had been established mere months before the contract went out to tender and was specifically set up to participate in the transaction.

In 2017, the South Gauteng High Court, in Johannesburg, ruled that the contract with Swifambo was invalid and that it should have been awarded to GE, which had also submitted a bid. Swifambo appealed the ruling; however, the Supreme Court of Appeal (SCA) in November 2018 ruled that the contract was invalid and that Swifambo would have to repay the R2.60-billion to PRASA.

Swifambo subsequently applied to the Constitutional Court for leave to appeal the SCA ruling. The Constitutional Court, however, ruled in May 2019 that Swifambo's application for leave to appeal had no reasonable prospect of success.

PRASA chairperson Khanyisile Kweyama noted in a statement issued in May 2019 that the Constitutional Court's ruling left Swifambo with no further legal remedies and would enable PRASA to recover the R2.60-billion.

Meanwhile, to further support its modernisation programme, PRASA is implementing a modern signalling system to replace the old mechanical and electromechanical signalling interlocking technology with electronic interlocking systems. This entails the construction of control centres in Gauteng, the Western Cape and KwaZulu-Natal, and the implementation of automatic train protection with in-cab signalling functionality.

PRASA expects the construction of the control centres and the connection of stations to those control centres to be completed over the MTEF period to 2021/22.

Engineering News quoted PRASA strategic asset development group executive Piet Sebola in March 2019 as stating that the new signalling system would improve safety, as well as the frequency of train movements, with an expected headway of 2.5 minutes between trains.

PRASA's depot modernisation, meanwhile, involves the upgrade of six depots to ensure the optimal performance of the new rolling stock. During the MTEF period to 2021/22, the modernisation of three depots – Wolmerton, in Gauteng; Paarden-Eiland, in the Western Cape; and Springfield, in KwaZulu-Natal – will be prioritised.

Gauteng Transport Authority

The Gauteng provincial government approved the Gauteng Transport Authority (GTA) Bill, aimed at creating a transport authority for the entire Gauteng city region, in April 2019. Once established, the proposed GTA will be responsible for the planning, integration and enforcement of public transport operations across the province, including the Metrorail system, the Gautrain, bus-rapid transit systems and taxi operations.

Gautrain Management Agency (GMA) CEO Jack van der Merwe has been appointed for a six-month period to lead the establishment of the GTA. He will hold this position in addition to his existing role as GMA CEO.

Engineering News quoted Gauteng Roads and Transport MEC Dr Ismail Vadi in April 2019 as stating that the establishment of the GTA was vital to integrating transport coordination and public transport operations in the province.

Source: *Engineering News*

The rail agency also intends to upgrade several of its train stations in Gauteng, the Western Cape and KwaZulu-Natal to improve access and security, increase commercial space and improve the aesthetics of the train stations.

Another element of the modernisation programme is the 120 km/h perway programme, which is aimed at upgrading perway infrastructure to enable its rolling stock to reach speeds of 120 km/h, compared with the 90 km/h that is currently possible. PRASA will correct rail line geometry, replace turnouts, double the railway track from Germiston to Knights, in Gauteng, and replace old railway tracks across Gauteng, the Western Cape and KwaZulu-Natal.

Sebola also told *Engineering News* in March 2019 that PRASA was developing designs for the construction of the 17 km Motherwell rail link, in the Eastern Cape, while detailed designs and an environmental-impact assessment was under way for the 9.50 km Blue Downs rail line, in the Western Cape. A feasibility study had also been completed for the proposed 11 km Daveyton-Etwatwa rail line.

Gautrain

The 82-km-long Gautrain is a rapid rail service that connects Tshwane, Johannesburg and Ekurhuleni, in Gauteng. The system is operated by the Bombela Concession Company (BCC) and managed by the provincial authority, the Gautrain Management Agency (GMA) and comprises ten railway stations. As a further service to get commuters to their end destinations, the Gautrain also operates a bus service that operates in areas surrounding the railway stations.

Gautrain ridership reached a peak of just over 1.40-million passengers a month in May 2017, while Gautrain bus ridership reached a peak of 458 974 in May 2017.

However, GMA CEO Jack van der Merwe reports in the agency's 'Annual Report 2018' that South Africa's low economic growth rate negatively impacted on Gautrain passenger trips during the 2017/18 financial year. *Engineering News* also reported in January 2019 that Van der Merwe also cited capacity constraints on the Gautrain during the morning peak period, rivalry between taxis and e-hailing services operating near the Gautrain stations and a Gautrain rail strike during July and August 2018 as further reasons for the decrease in passenger numbers.

These factors contributed to a 3.80% year-on-year decrease in train passenger trips and a 6.30% year-on-year decrease in bus passenger trips during the 2017/18 financial year.

The decreasing ridership figures are of significant concern, given the impact this has on the grant the GMA receives from the Gauteng provincial government to operate the system. The grant, which is also known as a patronage guarantee, bridges the gap between passenger fees and the operating costs of running the system. For 2017/18, the provincial government paid the GMA a patronage guarantee of R1.57-billion, compared with the patronage guarantee of R1.35-billion paid to the GMA in 2016/17.

It is not unusual for public transport systems to be subsidised by government and this happens worldwide; however, the Congress of South African Trade Unions has expressed its frustration over the subsidisation of the Gautrain, noting that the provincial government is not focused on providing safe public transport for the working class, but rather on providing such services for wealthier sections of society.

The GMA, meanwhile, is considering ways of increasing its ridership numbers. According to a January 2019 news article published by *Engineering News*, Van der Merwe had suggested that increasing the frequency of trains from five to six trainsets an hour and operating eight-car trainsets during peak periods would help to increase ridership numbers.

In May 2019, the GMA introduced additional eight-car trains during the morning and afternoon peak periods on the north-to-south line. He further suggested that fare structures could be adapted to promote off-peak use and manage peak period demand. The GMA and BCC were also considering extending the Gautrain's operating hours and reconfiguring the seating in the train carriages to make room for more standing passengers.

Further, additional parking has been added at the Centurion station and more parking will be added to the Rosebank and Hatfield stations.

Meanwhile, as part of plans to increase ridership, the GMA and BCC in 2011 started introducing Gautrain midibus taxi services at Gautrain stations to complement its own bus service and cover more feeder routes to and from the stations. *Engineering News* reported in October 2018 that three new midibus routes had been launched to transport passengers from the Gautrain Marlboro station to Kelvin, Buccleuch and the Greenstone Mall.

The news article reported that more than 1 000 passengers had used the midibus system on the three routes during its first week of operations. Similar services were available at the Sandton, Centurion and Hatfield Gautrain stations.

The midibus taxi service is expected to eventually be rolled out across the entire Gautrain network, with routes to be chosen carefully to allow for integration with other public transport services.

The GMA and BCC are also seeking to procure more rolling stock for the Gautrain, but this has proved challenging. *Engineering News* reported in January 2019 that a tender process that had started in February 2016 to procure 12 additional four-car trainsets to expand the Gautrain's capacity had not resulted in a winning bidder being chosen. Of the three shortlisted bidders – Bombardier Transport, CRRC E-Loco and Egoli Rail Consortium – two had not submitted bids, while the one bid that had been submitted had not met all the minimum criteria. In May 2019, *Engineering News* reported that the GMA and BCC would not reissue the tender for the procurement of the locomotives. GMA communications and marketing senior executive manager Dr Barbara Jensen said that the GMA and BCC were preparing a business case to acquire a smaller number of trainsets and that the larger procurement would be deferred to 2026.

Further, in line with the Gauteng provincial government's plans to integrate public transport services in the province, plans are under way to eventually expand the Gautrain. The proposed expansion, which will result in the construction of about 150 km of additional railway track and 19 new stations, might not fall under the Gautrain brand, as it will seek greater integration with the existing Metrorail service in the province.

The expansion proposes new rail lines be added from Little Falls to Cosmo City, Randburg and then to Sandton, as well as from Jabulani, in Soweto, to Roodepoort and then Little Falls. It further proposes rail lines to transport passengers from Mamelodi to Hazeldean, Irene and then Samrand; from Cosmo City to Fourways, Sunninghill, Olievenhoutbosch and then Samrand; from Marlboro to Modderfontein, Rhodesfield and then OR Tambo International Airport; and from Rhodesfield to the East Rand Mall and Boksburg.

The GMA noted in its 'Annual Report 2018' that a feasibility study for the proposed expansion had determined that it was likely to create more than 211 000 jobs while contributing to economic growth through about R80-billion worth of local production value, of which a quarter would go to black-owned companies.

Gauteng Roads and Transport MEC Dr Ismail Vadi, however, warned in October 2018, that there was unlikely to be an imminent decision on whether to proceed with the expansion. *Engineering News* quoted him as saying that the GMA was still in discussions with the National Treasury about additional revenue models and demand studies.

Meanwhile, Van der Merwe told *Engineering News* in January 2019 that the GMA would prefer to use a normal engineering, procurement and construction tender process for the proposed expansion project, rather than the public–private partnership method that had been used with the construction of the initial Gautrain system, as this had resulted in significant litigation.

Following the construction of the existing Gautrain system, BCC had engaged in drawn-out litigation with construction firms about matters including water ingress in one of the tunnels and design changes to certain cantilever bridges that had resulted in additional costs. These matters were settled only in 2016, despite the Gautrain having started operations on the link from the OR Tambo International Airport in 2010 and on the link between Park Station, in Johannesburg, to Tshwane in 2012.

According to *Engineering News*, the proposed expansion was, by January 2019, subject to authorisation by the National Treasury. This was likely to be approved only in the second half of 2019.

RAIL SAFETY

In contrast to previous years, the Railway Safety Regulator (RSR), which is tasked with overseeing and enforcing the safety performance of South African railways, as well as that of other operators entering the country's rail network, shifted the focus of its 2017/18 'State of the Safety' report to the harm caused to persons, including the public, passengers and operators' workforces, rather than the economic impact of railway-safety related incidents.

The report considered operational occurrences, which reached 4 478, compared with 4 066 in 2016/17 and security-related incidents, which totalled 7 737 in 2017/18 – a 21.30% increase on the 6 378 incidents recorded in 2016/17.

Picture by Creamer Media

The top five operational occurrences in 2017/18 were collisions, at 1 027 (2016/17: 1 006); fire, at 745 (2016/17: 432); platform-train interchange occurrences, at 744 (2016/17: 573); people struck by trains, at 588 (2016/17: 651); and derailments, at 450 (2016/17: 386).

In terms of security-related incidents, the theft of assets and malicious damage or vandalism of property were the two biggest areas of concern. The theft of assets accounted for 64.40% of all security-related incidents in 2017/18, followed by vandalism at 22.20%.

Incidents impacting on personal safety at railway stations accounted for 5.20% of security incidents, followed by incidents impacting on personal safety on trains at 5.10%.

Meanwhile, the number of fatalities increased to 22 in 2017/18, from 16 in 2016/17, while the number of injuries increased to 552, from 525 in 2016/17. The rising number of train collisions contributed to the increase in fatalities and injuries. The RSR stated that poor infrastructure maintenance and the failure of signalling systems, as a result of theft and vandalism, contributed to some of the collisions.

In other instances, the collisions were attributed to improper handover processes during shift changes, a lack of or poor supervision that resulted in employees operating trains unsafely and a significant vacancy rate in safety-critical job grades.

After a number of collisions late in 2018 and in early 2019, PRASA struggled to have its operating licences renewed by the RSR. The safety regulator on several occasions threatened to revoke PRASA's safety permits following accidents across the country. Manual authorisations were identified as a significant contributor to the various rail accidents.

The Gautrain, meanwhile, has implemented various technologies to ensure its trains are operated safely. GMA CEO Jack van der Merwe told *Engineering News* in a March 2018 interview that the Gautrain trains feature signalling inside the driver's cab that alerts the driver when he or she needs to stop. Should the driver fail to stop the train within a certain distance, the train will automatically come to a halt.

Another safety feature within the trains is a dead man switch, which the driver is required to press every minute while driving the train. If the switch is not pressed, the train will come to a halt. The train will restart only once the system registers that there is indeed a driver capable of operating the train.

Meanwhile, PRASA and Transnet are investing in measures to protect their rolling stock and infrastructure, as well as the rail industry employees and commuters. PRASA plans to spend R843-million on its Security Technology Plan over the MTEF period to 2021/22. As part of this investment, it will erect fences or walls along certain rail corridors, as well as at depots to protect its rolling stock. It will also seek ways of protecting substations, tie stations and relay rooms, as well as provide on-board protection for commuters.

Specialised rail police officers have also been appointed to help improve safety.

Newswire service, African News Agency, reported in January 2019 that the Rail Enforcement Unit (REU), which is funded by the City of Cape Town, the Western Cape provincial government and PRASA, has contributed to improved safety of rail commuters and infrastructure. The REU comprises 100 law enforcement officers who, in addition to security personnel, help to protect commuters and rail infrastructure. The article noted that the REU had, in its first two months of operating, arrested 36 people for a range of crimes, while 379.5 m of stolen cable and 800 kg of stolen railway signal cable had been recovered.

Political party, the Democratic Alliance, has meanwhile called on the national government and the Department of Transport to allow the City of Cape Town and the Western Cape provincial government to take control of Metrorail in Cape Town to improve service delivery and commuter safety, online publication Fin24 reported in April 2019.

Transnet revealed in February 2019 that its TFR business had partnered with the South African Police Service (SAPS) to mitigate the theft of its infrastructure, as well as incidences of sabotage along its export coal corridor. *Engineering News* reported at the time that a 200-wagon coal train had derailed near Richards Bay, in December 2018, after the rail line had been cut by a blowtorch.

The derailment cost TFR R300-million in revenue and resulted in the loss of 850 000 t of coal. The line had to be temporarily shut down for repairs.

Further, while copper theft remains a concern, TFR is also experiencing an increase in the theft of other equipment, such as batteries that provide back-up power supply to its signalling systems, which disrupt its operations. *Engineering News* reported in February 2019 that these incidences cost it billions of rands every year.

Transnet and the SAPS have committed to establishing a war room to tackle such crimes. TFR is also replacing copper cables with low- or no-copper substitutes to try to reduce operational disruptions as a result of the theft of copper cables.

Picture by Creamer Media

OUTLOOK

While the South African government continues to invest billions of rands in its transport networks, there remains a large funding gap that needs to be filled so that the country has sufficient capacity to meet demand.

As part of President Cyril Ramaphosa's drive to attract investment into South Africa, billions of rands in additional funding are being made available for priority road projects.

However, the ongoing uncertainty about the funding of road infrastructure using the user-pays system is impacting negatively on not only the expansion of road infrastructure but potentially also on South Africa's economy.

There is generally much public mistrust over the payment of taxes and what the funds are spent on, with serious allegations of corruption, which is said to have resulted in billions of rands being misappropriated in recent years, adding to that mistrust.

Government, along with entities, such as the South African National Roads Agency, the Passenger Rail Agency of South Africa (PRASA) and Transnet, are also considering how they fund their infrastructure, as well as how corruption has impacted on their ability to spend money where it needs to be spent in recent years.

In the public transport sector, government is also considering which modes of public transport it is subsidising and how it can better integrate public transport to ensure that more road users are able to use public transport systems in future.

Some provincial governments, particularly those in Gauteng and the Western Cape, are considering taking over the rail systems being managed by PRASA.

Picture by Creamer Media

Picture by Creamer Media

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