TRANSNET

Transnet Freight Rail

2021

Contents

Business overview

Freight Rail is the largest Operating Division (OD) of Transnet. The OD provides rail network infrastructure and operates rail services over major rail corridors to transport commodities for export, and regional and domestic markets. Freight Rail operates world-class heavy-haul coal and iron ore export lines and has extended this capability to export manganese on the iron ore line. Freight Rail also transports a broad range of general freight commodities including mining, agricultural and manufactured goods; bulk liquids; containerised freight; and automotive units and components.

Freight Rail's network and rail services provide strategic links between ports, freight terminals and production hubs; and connectivity with the railways of the Southern African Development Community (SADC) to support regional integration. Infrastructure connectivity coupled with close cooperation between Transnet ODs and collaboration with key customers and industry role players enable the delivery of freight volumes across industry supply chains.

There is sufficient validated demand in the market for rail services across key commodities. However, rail capacity is constrained by network infrastructure condition and an exponential rise in security incidents affecting both network and rolling stock assets. The reliability of new locomotive fleets is compromised by the lack of capacity to procure maintenance spares and components locally while the older fleets are unreliable due to obsolescence, further reducing available rail capacity to meet customer demand.

Highlights

The 2020/21 financial year may be recorded as a year of momentous change, disruption, adaptation, opportunity and collaboration. The disastrous impact of the COVID-19 pandemic and resultant socio-economic and business conditions on rail transport are acutely evident in the 2020/21 volume performance, which plummeted to a level last seen in 2009 following the global recession. This past year has demanded much of the newly appointed leadership team to steer Freight Rail through a challenging period for the railway sector.

The beginning of the financial year under review coincided with the implementation of national lockdown restrictions, which severely limited production in the economy and subsequently reduced the demand for rail transport services. Volumes were marginally offset as volume increases were recorded when the country moved to less restrictive lockdown levels.

Freight Rail's responsibility towards ensuring employee well-being in the aftermath of the global pandemic implied several adjustments in operating practices and norms. The OD developed and implemented new operational practices to ensure the continuation of operations in the safest manner possible for customers, contractors and employees – particularly those in core operational and maintenance vocations. Management and corporate staff had to adapt to very new and different ways of connecting and supporting while working remotely to find the best approaches to serve operations and the organisation.

With the relaxation to alert level 1 in mid-September 2020, an extreme escalation in security-related disruptions was observed throughout our operations, constraining capacity and contributing to the below-target volume performance.

The unprecedented nature of this challenging operating environment was compounded by adverse weather conditions, with severe winter storms in the Cape and heavy rains in the north-eastern parts of South Africa in the last few months of the financial year. Furthermore, incidents of community unrest disrupted train operations and caused damage to network and rolling stock assets which exacerbated existing operational challenges.

During the financial year Freight Rail pursued opportunities to collaborate with all stakeholders in finding ways to recover volumes and meet customer demand. Ultimately, quantities of commodities transported were not sufficient to meet budgeted volumes. Total Freight Rail volume performance declined to 183,29 mt (2020: 212,3 mt), 13,66% lower than the prior year. At the start of the pandemic, Freight Rail had developed possible volume scenarios and interventions to mitigate the impact. The 183,29 performance fell within a "Middle Road" scenario while a "Worst Case" scenario of -160 mt was averted. There were contractions in most sectors compared to the prior year, with general freight volumes declining by 21,72% (2021: 63,4 mt and 2020: 80,99 mt); export coal by 7,76% (2021: 66,9 mt and 2020: 72,53 mt); and export iron ore by 9,77% (2021: 53,0 mt and 2020: 58,85 mt).

The concerted efforts of Freight Rail during this extraordinary time enabled the achievement of highlights in certain areas of the business as Freight Rail endeavoured to address stakeholder needs:

COVID-19

Freight Rail established a COVID-19 National Command Centre consisting of executive and senior management leadership. It reported to the Transnet COVID-19 National Command Centre. This task team was dedicated to closely monitoring and tackling the challenges brought about by the COVID-19 pandemic, both at a strategic level and on a day-to-day operational level.

Business reorganisation

- Freight Rail developed a new operating model and executive leadership structure.
- The Executive Committee structure was streamlined to ensure a hands-on approach to effectively manage and strategically position the business for the future.
- The Corridor Operating Model was implemented to strengthen operational focus, ramp up rail volumes and improve operational efficiency. By half year, managing executives for each corridor had been appointed and deployed to the six corridors, namely North Corridor, Ore Corridor, North-East Corridor, Cape Corridor, Natal Corridor and Central Corridor.

Back to rail

Successful back-to-rail and customer collaboration initiatives were pursued and resulted in volumes equivalent to 85 349 truckloads being migrated from road to rail during the year under review.

Corridor performance highlights

- **North Corridor (NorthCor)**
  - The NorthCor team achieved a new weekly record throughput of 12 export coal trains from Grootegeluk to Richards Bay Coal Terminal (69 119 tons).
  - In addition, the Pyramid South Cluster raised its weekly performance above the 200 000 tons mark by achieving 201 018 tons. This level of weekly performance was last seen in the 2019/20 financial year (209 397 tons).

- **Ore Corridor**
  - The Ore Corridor team delivered sterling weekly performance during the year by moving 35 iron ore trains with 1 303 762 tons in a week against a target of 1 229 249 tons. This was the highest number of export iron ore trains delivered in a week since the beginning of the 2020/21 financial year.

- **North-East Corridor**
  - The highest weekly volume achieved during the 2020/21 financial year was 515 940 tons against target of 514 956 tons in week 23. The week also saw the Nelspruit cluster achieve a new all-time weekly record of 308 631 tons, exceeding the previous record of 303 860 tons achieved in 2017/18. The Nelspruit achievement included 52 magnetite trains – the highest number of magnetite trains recorded in the 2020/21 financial year.
  - The team railed 14 chrome and ferrochrome trains to Maputo in week 14 (41 694 tons) contributing to goals for greater regional integration. This is the highest number of chrome trains railed to Maputo in one operational week. The previous record was achieved in the 2019/20 financial year when 11 trains were moved (32 232 tons).
  - The corridor successfully implemented the ring-fencing of locomotives between Phalaborwa–Komatipoort, Komatipoort–eSwatini and Golela–Richards Bay during the COVID-19 pandemic. This allowed for continued operations and kept COVID-19 cases at a minimum during the height of the pandemic.

- **Cape Corridor**
  - The Cape Corridor team achieved 14,6 mt against a target of 13,98 mt, a 4,4% improvement against the target that was revised following the impact of the COVID-19 pandemic.
  - Investments were made in the Belcon Terminal to provide value-added services that contributed to FMCG market development opportunities:
    - A reefer container service was introduced in February 2021 that enables a reefer cold supply chain service between Belcon and the Port of Cape Town.
    - Belcon was established to provide an alternative railing and storage option for customers when the Port of Cape Town is wind-bound and not operational.
    - Belcon was introduced as a rail service for large retailers in the FMCG market, where containers are railed from the Port of Cape Town to Belcon, from where they are railed to distribution centres.
  - Significant investments were made in branch line network rehabilitation and upgrades in anticipation of launching rail operations in the new financial year:
    - -R27 million was invested in the Cookhouse–Blaney line to trigger movement of freight from road to rail and shorten the distance between the ports of Gqerberha and East London, thereby positively impacting train turnaround and cycle times.
  - The manganese to Cape Town service was stabilised to sustain four trains per week.

- **Natal Corridor (Natcor)**
  - As part of Transnet's effort to relieve congestion at the Port of Durban precinct, Freight Rail increased volumes of manganese from 170 579 tons to 327 321 tons railed to Durban, equating to a road truckload reduction of 4 610. Freight Rail also increased grain volumes transported to 235 826 tons, which translates to just over 6 900 road truckloads moved on rail.
  - Freight Rail has reflected significant growth of 40% (2021: 6 193 TEUs; 2020: 4 490 TEUs) in the export grain reefer programme. Plans are underway to support the grain industry with further growth in the 2021 grain season.
  - Freight Rail also made considerable inroads into decongesting the City of eThekwini by growing the short haul rail service offering by 24% to 45 841 TEUs from various logistics and customer hubs within the City of eThekwini to the Port of Durban precinct.
  - In an effort to regulate the flow of road trucks at City Deep Terminal, the country's largest and busiest inland port, Freight Rail implemented the online Navis Truck Appointment System. The aim of this system is to improve customer service at the terminal by eliminating excessively long truck queues at the gate.
  - Freight Rail ensured readiness to service grain farmers through the reopening of the branch line from Reitz to Frankfort in the Free State. This milestone ensures that the entire line from Reitz to Villiers is operational. The 50 km portion of the line had been closed for six months for rehabilitation.

- **Central Corridor**
  - The reopening of the Leeufontein link at the beginning of March 2021 has improved the speed by which Freight Rail services the automotive industry. The link was vandalised and 6 000 springs stolen, which required that trains servicing major automotive customers and Pretcon be diverted via Pyramid South, which is approximately 60 km further and takes 10 hours longer to service customers. The reopening was made possible due to the collaborative efforts of the teams from North-East Corridor, Central Corridor, Rail Network, Security and Passenger Rail Agency of South Africa (Prasa).
  - Ongoing maintenance and upgrades in the Sentrarand Yard have unlocked three slots that were lost due to manual authorisations. Several points machines have also been restored to reduce the risk of manual authorisations and cranking.

Rail infrastructure improvement

- The rehabilitation of the embankment at Thornwood Station in Durban has been completed. The line which transports containers and vehicles, among other commodities, had collapsed due to excessive water ingress. This meant that Freight Rail lost 27 train slots per day, negatively affecting volumes on the line; however, the reopening of the line has released these lost train slots.
- In a joint effort between the Department of Trade, Industry and Competition, the Department of Public Enterprises and Transnet, and as part of a strategy to localise rail manufacturing, a request for proposal (relating to local manufacture and supply of rails was issued.

Security

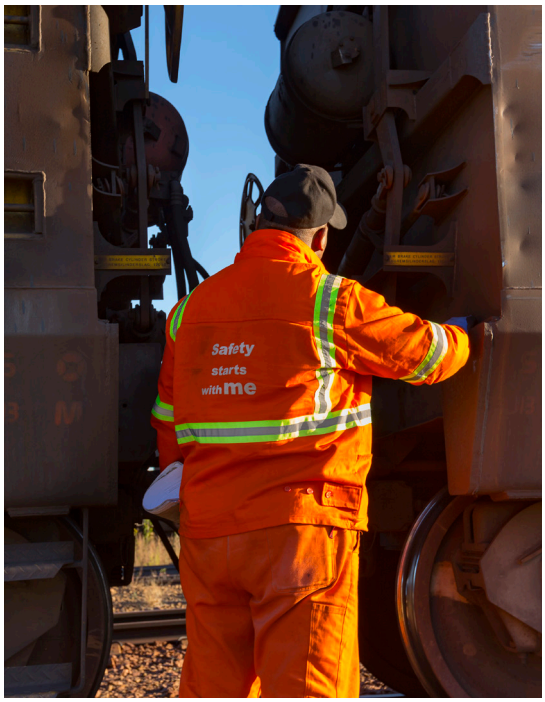
- One of the many interventions implemented to address the increase in highly disruptive security incidents was the establishment of the internal Rapid Response Centre service to accelerate reactive responses to incidents.
- In an effort to overcome the ongoing challenges with overhead cable theft and other perpetuating criminal activities that are not only obstructing the rail service, but also the economy of South Africa, Freight Rail initiated security workshops with customers to explore the possibility of collaboration to curb the incidents. For example, an engagement session with the coal and chrome industries was held. An agreement was reached where industry will assist in addressing security incidents on the rail line. As a result, some industry players have started assigning their own security practitioners to assist in reviewing Freight Rail's security plans, and also requested to be apportioned parts of the rail line to protect.
- Freight Rail recorded significant progress in addressing cable theft and vandalism as more than 500 arrests were made nationally in connection with the theft of petroleum products and rail equipment. Arrests were achieved through joint security operations between Freight Rail, the Hawks, National Intelligence and the South Africa Police Service.

Safety

- During the October 2020 Transport Month, Freight Rail together with the Rail Safety Regulator, Prasa, Railway Police, Metro Police Fire Department, community forums, Department of Transport and other stakeholders launched a National Level Crossing and Safety Campaign. The aim was to sensitise employees, motorists, pedestrians and the general public about safety at level crossings in road and rail environments.
- Technology implementation to address safety included the modification of the 10 yard point system into a simple push-button system on the iron ore line in Sishen and Saldanha to improve safe operations of yards.

Stakeholder engagement

- Freight Rail participated in the Transnet-hosted Cargo Consolidated Workshop in December 2020 with top leadership representing cargo consolidators (logistics service providers, traders and back-of-port operators) for key sectors such as FMCG, mining, agriculture, manufacturing and construction as well as other stakeholders including the ports. The main objectives were to explore possible collaboration opportunities in order to stay resilient during the economic downturn, to drive more volumes to rail in support of the road-to-rail strategy, and to grow the FMCG market.



Strategic context

The future growth and sustainability of South Africa's rail industry depends on collaboration with the private sector and customers to improve overall rail system effectiveness, particularly in the areas of innovation, digital systems, technology, logistics capability, investment funding and new business models for wagons ownership and the operation of inland terminals. Freight Rail's leadership has adopted a strategic direction aligned to the overall Transnet strategy to address these opportunities and reposition the business for growth and competitiveness in the rail sector.

Infrastructure renewal and security are critical prerequisites (supported by sound and agile procurement processes and practices) for Freight Rail's business transformation through the Corridor Operating Model. Improved network conditions and a significant reduction in security incidents are vital for general freight volume and market share growth, reliable customer service, and to prepare the rail sector for future private operator access models. Collaboration with industry and investment in security technologies are key elements of the strategy.

To enable third-party access to the freight rail network, Freight Rail will separate operations and rail infrastructure financial accounts. This will lay the foundation for commercial separation for fair and accurate charging of slots for third-party operators. The establishment of the Interim Transport Economic Regulator will be crucial in enabling access to the rail network in a fair and transparent manner.

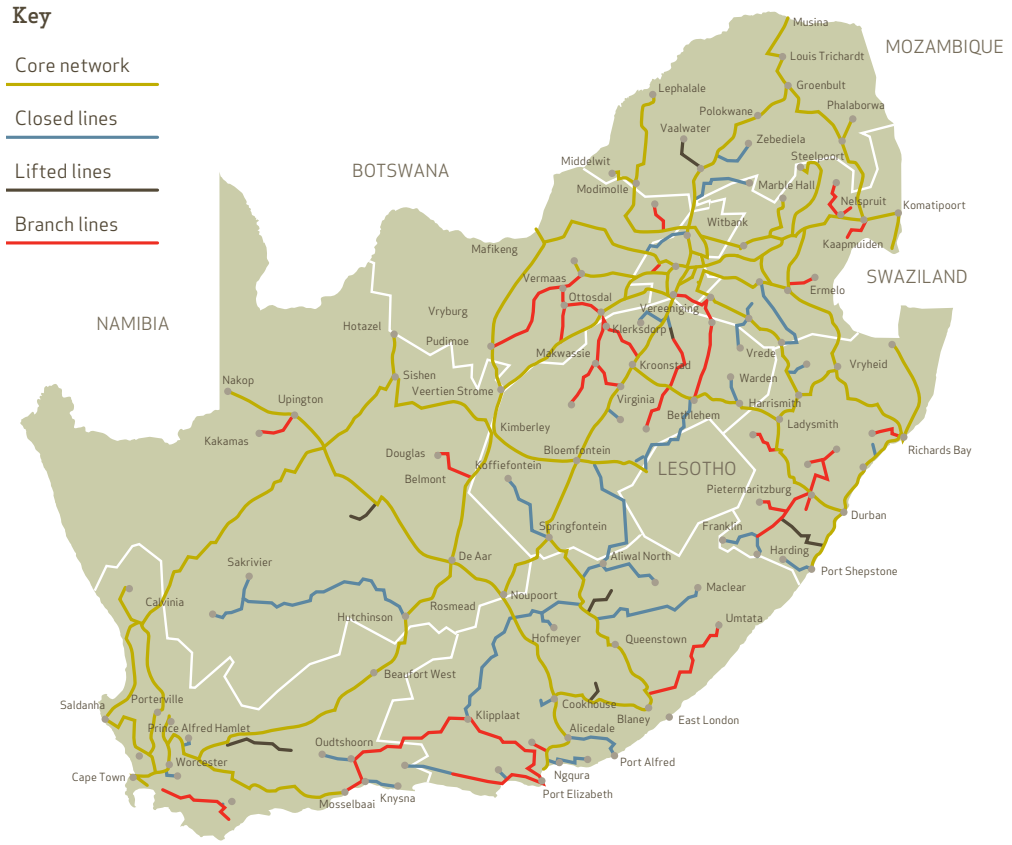
Transnet will release requests for proposals to operators for the rehabilitation of branch lines early in the 2021/22 financial year and in subsequent years. Transnet, together with the private sector, will invest to ensure the viability of branch lines, and enabling policies and access regimes for branch line operators are under development.

These are crucial steps to move freight from road to rail and increase the competitiveness of South Africa's rail sector.

Where we operate

Freight Rail maintains and manages a complex rail network which extends across South Africa and comprises approximately 31 000 track km (20 911 route km) over which commodities are hauled by locomotives in wagons specifically suited to the commodity type. The diverse rail network comprises -1 500 km heavy-haul lines. The network also includes 3 928 km of branch lines that serve as feeders to main lines.

Figure 1: Freight Rail network

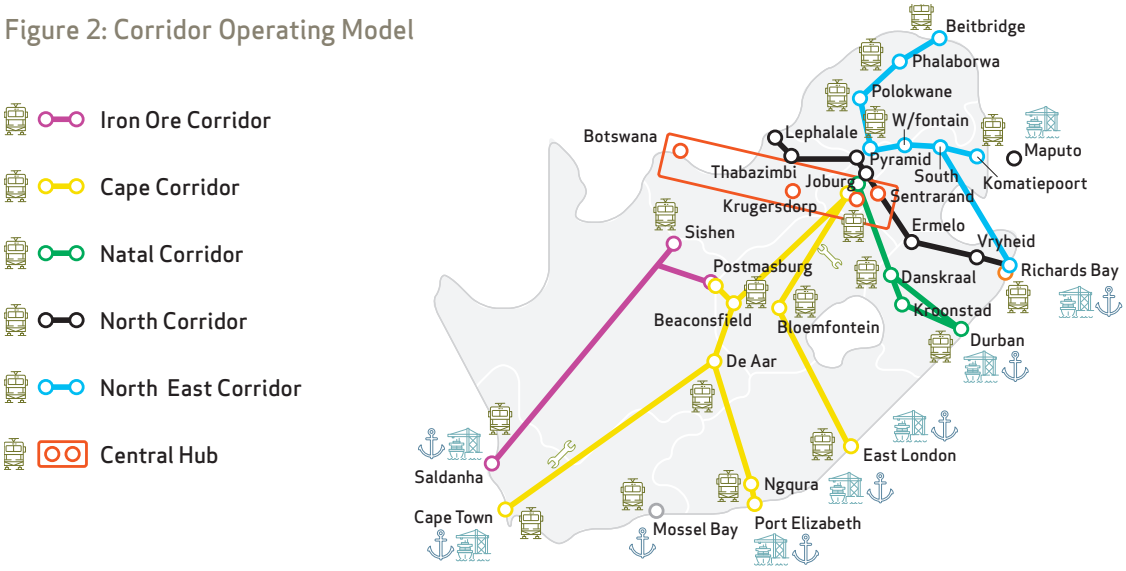


Rail infrastructure assets

- ±31 000 km of track
- 20 911 route km
- Core network – 12 801 route km
- **Bridges/structures**
  - Bridges – 2 696
  - Tunnels – 198
- **Network traction**
  - 50kV AC – 861 route km
  - 25kV AC – 2 516 route km
  - 3kV DC – 4 621 route km
  - Diesel – 12 955 route km
- **Traction substations**
  - 3kV DC substations – 346
  - 25kV AC substations – 99
  - 50kV AC feeder stations – 7
- **Train authorisation systems**
  - Signalling basic stations – 2 146
- **Axle loading**
  - Main lines at 20t/axle
  - Ore line at 30t/axle
  - Coal line at 26t/axle

Freight Rail has implemented the Corridor Operating Model to respond to the rapidly changing business, market and policy environments, and to drive improved business performance and competitiveness. This model is designed to improve decision-making, responsiveness to customer needs and integrated problem solving. Each corridor is led by a managing executive who is physically located in the heart of the operations. In addition, the closer alignment of Freight Rail corridors with Port Terminals will improve operational interfaces, drive supply chain efficiencies and unlock capacity for growth of volumes on rail.

Figure 2: Corridor Operating Model



The characteristics of each corridor are unique and are leveraged to improve corridor efficiencies and optimise integrated supply chains for key Transnet commodity sector growth.

- **NorthCor**
  NorthCor comprises a diverse mix of line types and capacities, which feed both domestic and export markets and transport more than 40% of Freight Rail's total tonnages. The most prominent line section is the heavy-haul export line between Ermelo-South and Richards Bay, which serves the Mpumalanga coalfields via a feeder network known as the Coal Backbone. The system also serves the Waterberg coalfields by means of the Waterberg line and the Gauteng Freight Ring. The dominant direction is from Lephalale towards Pyramid South with export coal, domestic coal, Eskom coal, chrome, ferrochrome and cement being the top commodities. Chrome and ferrochrome flows originate between Phokeng and Pendoring and are mainly transported to Richards Bay for export. Domestic coal originates from Mpumalanga and Lephalale and is transported to various destinations around the country. The corridor is focusing on asset efficiencies for coal flows and also creating opportunities for growth of other mining commodities.

- **Ore Corridor**
  The ore line is one of the two main heavy haul-lines in South Africa. The iron ore corridor stretches 861 km from Sishen in the Northern Cape to Saldanha Bay on the West Coast. The ore line provides a world-class platform of heavy-haul capabilities (30 tons per axle), updated technology and improved efficiencies. The current iron ore export operation is optimised at 348 x CR13/14 wagon trains. The corridor has become an international player in providing a diverse range of heavy-haul logistics solutions for growing local and international markets and has been accommodating manganese exports since 2014. The ore line introduced a 375 x CR17 wagon manganese operation in September 2018, which is the longest production train in the world. Main commodities transported on the corridor are iron ore, manganese, cement and lime.

- **North-East Corridor**
  The North-East Corridor stretches from the Limpopo River at Beitbridge in the Limpopo province through Komatipoort to Richards Bay on the East Coast and from Pyramid/Witbank (Reyton) to Komatipoort. The corridor conveys 14% of Freight Rail's total volumes.

  The corridor strategically links the South African rail freight business with the SADC countries mainly through Eswatini, Zimbabwe, Mozambique, Zambia and the Democratic Republic of Congo. Commodities are transported via various border posts or gates of entry such as Komatipoort, Golela, Beitbridge, Livingstone and Sakania. The corridor has three prominent linear flows:
  - Phalaborwa to Maputo and Richards Bay, mainly transporting magnetite and rock phosphate;
  - Witbank to Maputo, mainly transporting chrome and coal; and
  - Intermodal (Reefer containers) originating from Tzaneen, Musina and Bela-Bela destined for Durban.

  High-yield general freight business flows within the corridor are magnetite, chrome, ferrochrome and rock phosphate. Strengths within the corridor are good rail connectivity with sub-Saharan Africa, enabling regional operational integration and collaboration across Transnet's ODs to improve service on integrated pit-to-port flows.

  The corridor focus includes:
  - Revising the value chain operating model to unlock capacity;
  - Implementing operational lever programmes to ensure process adherence, reduce system waste and increase capacity; and
  - Increasing train lengths for key commodities to optimise slots availability and improve locomotive utilisation.

- **Cape Corridor**
  The Cape Corridor stretches from Vereeniging in the north-east to Cape Town in the south. Corridor lines from the key mining area surrounding Hotazel in the Northern Cape connect to the ports of Gqeberha and Ngqura in the south-east, providing the primary export channel for South Africa's manganese. Corridor links between mines and the Central Corridor enable the transportation of manganese and iron ore for domestic markets. The corridor also includes various branch lines, such as Bellville–Bitterfontein and De Aar–Upington and sections of the lines from Bloemfontein to East London and Gqeberha. The corridor presents opportunities for the growth of automotive commodities, fruit from the Kirkwood area, cement, lime, grain and wheat. In addition, the Cape Corridor includes the line linking the Port of Cape Town to the Reef and connects with the ore line and Namibia. Growth opportunities lie in cross-border traffic to Namibia, and general freight growth in containerised agricultural products.

- **Natcor**
  Natcor links Durban with the economic hub in Gauteng through an extensive rail network. Natcor extends to Port Shepstone, Kroonstad and Richards Bay and includes connectivity to branch lines serving the grain and timber sectors. Natcor is a key logistics corridor of South Africa's freight transportation network and is vital in facilitating economic growth for the country. The main components of the bulk freight corridor consist of the Port of Durban; well established road, rail and pipeline links to Gauteng; and inland freight terminals to service the broader Gauteng area and countries to the north of South Africa's borders. Commodities conveyed on Natcor include containers, automotive, grain, fuel, coal and chrome.

  The corridor focus includes:
  - Revising Natcor's operating model to unlock capacity, absorb disruptions and improve quality of service rendered to customers in the value chain between the ports and Gauteng;
  - Implementing private sector partnership models;
  - Deploying technology at the City Deep Terminal to optimise customer-facing and terminal operations processes; and
  - Security technologies to address security incidents and disruptions.

- **Central Corridor**
  The Central Corridor fulfils a hybrid role of enabling the operations of other corridors and generating volumes.
  The network comprises the key junction and interface railway areas of Pretoria, Isando and Sentrarand, which are the key Prasa interface areas. These areas form the pivotal link for other corridors via this Central Hub and adjacent routes.
  The Sentrarand complex is a centrally located marshalling yard with surrounding mainlines that are used to sort wagons into trains according to their final destinations. Traffic through the Central Hub totals ~24 mtpa, with high-revenue commodities of chrome, coal, iron ore and manganese as well as time-sensitive traffic of containers to the automotive sector supporting the manufacturing industry. Fluidity and increased velocity through the Central Hub are vital to reducing cycle times and enabling general freight flows through the area.

  Central Corridor volumes are generated in the areas of Botswana, Krugersdorp, Lichtenburg and Vereeniging. The corridor provides a key link via the Krugersdorp and Mahikeng diesel line for traffic that supports regional integration between Botswana and South Africa, in cooperation with Botswana Rail. The branch line network that supports the maize triangle in North West province also forms part of the Central Corridor.

Regulatory environment

Freight Rail is committed to complying with all applicable regulatory requirements. In view of the importance of complying with the myriad of regulatory requirements and the increased emphasis on regulatory compliance, appropriate responses are required to mitigate the risk of non-compliance. Freight Rail evaluates applicable regulatory requirements on an annual basis to remain relevant in the changing regulatory environment.

The evolving Draft White Paper on National Rail Policy, the Economic Regulation of Transport Bill, 2020 and Government's Economic Reconstruction and Recovery Plan (the Plan) all advocate greater private sector participation in the rail sector and this includes granting third-party rail operator access to the core rail network. The Plan also highlights the urgency to establish a Single Transport Economic Regulator to create a conducive environment for competition and efficiency. Freight Rail will position the business appropriately in readiness to facilitate rail reform. Readiness will address the development of access, funding, equity partnership and concession models that support competitive growth and sustainability of South Africa's rail sector.

Transnet supports a vertically integrated rail operating model as it has been shown to be the best model for operating a freight railway. According to the World Bank, more than 97% of freight is carried on networks owned by vertically integrated railways. Research also indicates that the costs of separation in countries with small railway markets appear to be disproportionate to the benefits. However, Freight Rail is currently pursuing an approach of accounting separation followed by commercial separation. Access regime models for third-party operator access to the network are being explored for development and implementation in the short to medium term.

Transnet will continue to engage the DoT, the DPE, National Treasury and other government departments or organs of state to seek appropriate application of the rail reform agenda. Transnet will also continue to engage with the DoT, Parliament, Portfolio Committee on Transport, the DPE and other significant role players in order to bring fairness to the economic regulation of all transport modes in general, and particularly to level the playing fields between road and rail transport.

Operational context

At the beginning of 2020, South Africa had entered a recession, with the economy contracting by 1,4% in the last quarter of 2019 as industries struggled to maintain or grow production output. The economy further contracted by 2% during the first quarter of 2020 as international demand was poor due to many countries adjusting their economic activities as a measure to curb the spread of COVID-19. The initial closure of international borders resulted in subdued global demand and negatively impacted Freight Rail's customers in the mining, manufacturing and intermodal sectors. Freight Rail continued to experience increased incidents of theft, vandalism, sabotage to assets and equipment as well as operational disruptions due to community unrest. This affected the availability of the network and quality of service to customers was compromised, resulting in lower volumes being moved and thus negatively impacting the business performance of other key financial indicators.

Despite a difficult start to the first half of 2020, the latter part of the year reflected marginal recovery, particularly in the mining sector. Even though performance in quarters three and four of 2020/21 indicated recovery, this was not sufficient to make up for the losses encountered during the first half of the financial year.

Core initiatives

Freight Rail has specifically designed "Must Win Battles" to address the challenges of the current operating environment, to optimise performance and grow the business. Leadership has started implementing and will continue to drive the imperatives for infrastructure improvement, addressing security and safety; managing operational efficiency; reducing costs; building a competent workforce; and improving customer service reliability.

The key strategic priority for business performance improvement is to continue to raise the overall condition of the rail network infrastructure. Comprehensive maintenance shutdowns were carried out on all corridors of the network during the financial year under review. Shutdown programmes were rescheduled in accordance with applicable lockdown level restrictions and to enable the procurement of components and materials required to carry out the work. Maintenance interventions to unlock slot capacity and prevent incidents included uplifting temporary speed restrictions over 2 245 km of lines; reducing manual train authorisations (e.g. at Bayhead complex); replacing rail and turnouts; and ballast screening (e.g. tamping and screening on the iron ore line).

Network renewal is supported by interventions to secure the network against the threats of theft, vandalism and sabotage and to improve safe operational performance. A national strategic security plan has been developed to address security incidents in all corridors and to protect people, infrastructure and rolling stock assets. The strategy includes cooperation with national law enforcement structures and security service providers. Opportunities for collaboration with customers are also being explored in the drive to curb ongoing challenges with overhead cable theft and other perpetuating criminal activities which are not only severely impacting the rail service, but also the economy of South Africa.

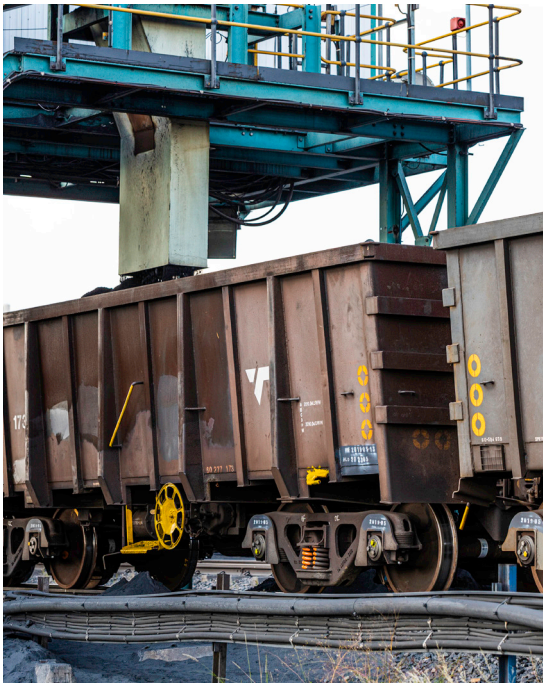
Management continued with the implementation of the Road to Safety maintenance intervention plan which focuses on fault management, planning, compliance and supervision. Interventions were also implemented to raise rail safety awareness among communities close to the rail reserve.

Corridor Operating Models, integrated with maintenance of network and rolling stock assets, were implemented to drive operational efficiency on all rail corridors. For example, diesel locomotives were deployed on sections of the network shared with Prasa (e.g. the Pretoria and Krugersdorp lines) to mitigate the cable theft impact on freight services. Operational efficiency programmes such as running longer trains, standardising wagon types and improving operational interfaces were also implemented.

At all operational levels, management continued to implement the People Pride and Care Programme to drive health and wellness interventions including workplace hygiene in all Freight Rail facilities to ensure an integrated response to the COVID-19 pandemic and its impact on people. This approach is supported by interventions to revise the organisation's design for greater productivity, individual and team performance, and to build a high-performance culture and promote the well-being of employees.

Various strategic initiatives were implemented in collaboration with logistics role players and customers to migrate volumes from road to rail. These initiatives resulted in 25 rail volume opportunities being realised, and yielded an achievement of 2,9 mt – equivalent to approximately 85 349 road truckloads being migrated from road to rail.

All interventions are designed to address the cost structure of the business to reduce unit and fixed costs and hence the cost of doing business, which will contribute to competitive pricing and improving financial sustainability.



Financial and operational performance

The difficult domestic and global trading conditions negatively impacted the operational and financial performance of Freight Rail, and that of its customers. This culminated in below-target achievements and a decline in volumes, operational efficiency and financial key performance indicators (KPIs) relative to the prior year performance.

Overview of KPIs

Table 1: Financial performance against KPIs

Key performance area and indicator	Unit of measure	2019 Actual	2020 Actual	**2021 Target**	**2021 Actual**	2022 Target
Financial sustainability						
EBITDA margin	%	44,8	42,1	**43,3**	**36,3**	40,7
Operating profit margin	%	24,8	22,4	**24,3**	**15,9**	22,2
Gearing	%	56,8	62,1	**59,9**	**62,3**	61,5
Net debt to EBITDA	times	3,75	4,01	**3,82**	**5,30**	3,97
Return on invested capital	%	6,6	4,7	**5,9**	**2,7**	5,3
Asset turnover – excluding CWIP	times	0,27	0,29	**0,33**	**0,27**	0,34
Cash interest cover	times	2,5	2,4	**2,6**	**2,3**	3,0
Capacity creation and maintenance						
Capital expenditure	R million	14 818	13 932	**14 487**	**11 926**	8 100
Tariffs						
Year-on-year weighted average R/ton change – general freight business	%	6,92	5,11	**1,85**	**3,8**	5,9

Financial performance review

Table 2: Financial performance review

Salient features	**Year ended 31 March 2021 R million**	Year ended 31 March 2020 R million	% change
Revenue	**39 448**	44 626	(11,6)
– General freight	**19 010**	23 236	(18,2)
– Export coal	**12 083**	12 514	(3,4)
– Export iron ore	**6 806**	7 148	(4,8)
– Other	**1 549**	1 729	(10,4)
Operating expenses	**(25 145)**	(25 832)	(2,7)
– Energy costs	**(4 839)**	(5 666)	(14,6)
– Maintenance	**(2 435)**	(1 884)	29,3)
– Materials	**(368)**	(606)	(39,4)
– Personnel costs	**(13 086)**	(13 298)	(1,6)
– Other costs	**(4 417)**	(4 379)	(0,9)
Profit from operations before depreciation, derecognition, amortisation and items listed below (EBITDA)	**14 303**	18 794	(23,9)
Depreciation, derecognition and amortisation	**8 021**	(8 780)	(8,6)

Table 2: Financial performance review (continued)

Salient features		Year ended 31 March 2021 R million	Year ended 31 March 2020 R million	% change
Profit from operations before items listed below		**6 282**	10 014	(37,3)
Impairments and fair value adjustments		**(1 756)**	(1 874)	(6,3)
Net finance costs		**(4 618)**	(6 057)	(23,8)
Profit before taxation		**(92)**	2 083	(104,4)
Total assets (excluding CWIP)		**141 544**	148 357	(4,6)
Profitability measures				
EBITDA margin[1]	%	**36,3**	42,1	(5,9)
Operating margin[2]	%	**15,9**	22,4	(6,5)
Return on invested capital[3]	%	**2,7**	4,7	(2,0)
Asset turnover (excluding CWIP)[4]	times	**0,27**	0,29	(6,8)
Capital investments[5]		**11 926**	13 932	(14.4)
Employees				
Permanent employees	number	**25 617**	26 053	(1,7)
Revenue per employee		**1 517**	1 711	(11,0)

[1] *EBITDA expressed as a percentage of revenue.*

[2] *Profit from operations before impairment of assets, fair value adjustments, net finance costs and taxation expressed as a percentage of revenue.*

[3] *Profit from operations before impairment of assets, fair value adjustments, net finance costs and taxation expressed as a percentage of average total assets, excluding capital work in progress.*

[4] *Revenue divided by average total assets, excluding capital work in progress.*

[5] *Actual capital expenditure (replacement plus expansion), excluding borrowing costs and including capitalised finance leases.*

Performance commentary

Financial sustainability

Revenue for the year under review decreased by 11,6% to R39 448 million (2020: R44 626 million), which is attributed to an 11,8% decline in rail volumes. Constrained volumes were slightly offset by an increase in average Rand/ton to R208,70 (2020: R204,86). The increase in average Rand/ton at 1,87% is lower than the inflation rate average of 3,34% for the year under review.

Operating expenses

Owing to the divisional efforts to contain costs during this difficult operating environment, adding to the relatively lower direct variable costs (reflected by a decrease in energy costs) in view of the lower volumes railed relative to prior year, operating expenses declined by 2,7% to R25 145 million (2020: R25 832 million). Personnel costs decreased by 1,6% to R13 086 million (2020: R13 298 million), despite a 7,5% increase in bargaining unit salaries in line with the wage agreement. Freight Rail froze the filling of vacancies to manage headcount and Transnet implemented a zero percent increase for management salaries during the year under review. The cost-savings drive was slightly offset by an increase in maintenance costs to continuously improve the state of the rolling stock and network in an attempt to address some of the backlog and related constraints that led to persistent operational challenges, such as locomotive failures and speed restrictions that perpetuated volume loss.

EBITDA and operating margins

Driven by the decline in revenue on the back of a flat operating cost line for the year under review, EBITDA and operating margins declined to 36,3% (2020: 42,1%) and 15,9% (2020: 22,4%), respectively.

Return on invested capital

Return on invested capital fell to 2,7% (2020: 4,7%), mainly as a result of a decrease in operating profit to R6 282 million (2020: R10 014 million) owing to lower volumes for the year under review.

Gearing

Financial gearing declined to 62,3% (2020: 62,1%), largely as a result of the reduction in reserves following the devaluation of rail infrastructure assets on the back of an increase in long-term borrowings to R75 533 million (2020: R74 309 million) due the decline in cash generated from operating activities.

Asset turnover (excluding CWIP)

The asset turnover rate for the year under review declined to 0,27 times (2020: 0,29 times) in line with the decrease in revenue. The deterioration of this KPI was mitigated by the reduction in total asset base, reported at R165 565 million relative to the prior year asset base of R164 385 million, following the devaluation of infrastructure assets.

Net debt to EBITDA

Net debt to EBITDA increased to 5,30 times (2020: 4,01 times) as a result of the decrease in EBITDA to R14 303 million (2020: R18 794 million), as well as an increase in long-term borrowings to R75 533 million (2020: R74 309 million).

Cash interest cover

Cash interest cover decreased to 2,3 times (2020: 2,4 times), primarily due to a decrease in cash generated from operations after working capital movement relative to the prior year.

Revenue per employee

Revenue per employee decreased by 11% to R1,52 million (2020: R1,71 million).

Looking ahead

In response to the challenging and constrained business environment, Transnet adopted both the zero-based budgeting and driver-based budgeting methods for 2021/22 planning and budgeting.

At a Transnet level, the 2021/22 financial plan aims to:

- Maintain financial stability guided by approved financial parameters (gearing, cash interest cover, debt/EBITDA and return on invested capital);
- Retain an investment grade credit rating, at least on a standalone basis, to enable cost-effective funding;
- Reinvest in the Company to maintain, grow and diversify operations;
- Optimise cost of capital, including external debt; and
- Optimise utilisation of working capital.

Capacity creation

Freight Rail invested R11 822 million in core areas of the business as indicated in the table below:

Table 3: Freight Rail investment summary

Category	Actual 2019/20 R million	Budget 2020/21 R million	**Actual 2020/21 R million**	Deviation
Infrastructure	3 703	5 529	**4 571**	(958)
Locomotives	3 670	2 993	**2 350**	(643)
Wagons	5 443	5 097	**3 806**	(1 291)
Other	1 116	868	**1 199**	331
Total	13 932	14 487	**11 926**	(2 561)

Total investment for the year amounted to R11 822 million, of which R8 655 million was spent on capitalised maintenance (copex) as depicted in the table below.

Table 4: Freight Rail investment in capitalised maintenance

Category	Actual 2019/20 R million	Budget 2020/21 R million	**Actual 2020/21 R million**	Deviation %
Infrastructure	3 000	4 339	**3 975**	(364)
Locomotives	2 335	2 176	**1 834**	(342)
Wagons	4 415	3 136	**2 846**	(290)
Capitalised maintenance (locos, wagons and infrastructure)	9 750	9 651	**8 655**	(996)

Table 5: Network maintenance (including export coal, iron ore and general freight)

	Key performance indicator	Measure	2019 Actual	2020 Actual	**2020/2021 Budget**	**2020/2021 Actual**	Deviation %
Network reliability and efficiency	Kilometres screened on the rail network	km	108,46	87,11	**105,00**	**169,73**	61,6
	Number of turnouts replaced on the rail network	number	34	28	**40**	**27**	(32,5)
	Number of sleepers installed on the rail network	number	380 573	315 463	**200 000**	**284 290**	42,1
	Kilometres of rail replaced on the rail network	km	118,00	46,55	**125,00**	**41,91**	(66,5)

Looking ahead

- Planned investment amounting to R8,1 billion has been approved for the 2020/21 financial year, of which R6 297 million is allocated to copex.
- Other focus areas within the approved budget will be the continuation of compliance and regulatory projects.

Overview of operational KPIs

Table 6: Operational performance against KPIs

Key performance area and indicator	Unit of measure	2019 Actual	2020 Actual	**2021 Target**	**2021 Actual**	2022 Target
Operational excellence						
Asset utilisation						
General freight business	Gtkm/Ntkm	1,0	1,4	**1,4**	**1,4**	1,4
Export coal	Gtkm/Ntkm	1,3	1,3	**1,2**	**1,3**	1,3
Export iron ore	Gtkm/Ntkm	1,2	1,2	**1,2**	**1,2**	1,2
Loco-utilisation						
General freight business	GTK'000/loco/month	4 551	4 177	**3 987**	**3 702**	3 041
Export coal	GTK'000/loco/month	11 147	18 002	**20 739**	**17 052**	17 594
Export iron ore	GTK'000/loco/month	34 122	46 686	**46 672**	**42 209**	43 582
Cycle time						
Export coal	hours	64,2	62,4	**64,0**	**69,0**	64,0
Export iron ore	hours	91,7	95,0	**88,0**	**110,0**	88,0
Export manganese	hours	151,3	153,7	**127,0**	**205,0**	127,0
Wagon turnaround time						
General freight business	days	7,9	9,8	**9,0**	**11,0**	8,0
Density						
General freight	GTK/routekm	4,9	4,7	**4,8**	**3,5**	4,6
Natcor	GTK/routekm	8,9	8,0	**8,7**	**5,4**	6,8
Capecor	GTK/routekm	5,77	5,09	**5,0**	**3,7**	5,1
Southcor	GTK/routekm	5,97	6,18	**6,1**	**4,8**	6,1
Service delivery						
On-time departure (average deviation from scheduled times)						
General freight business	minutes	(35)	(13)	**133**	**17**	120
Export coal	minutes	(58)	(44)	**36**	**(47)**	32
Export iron ore	minutes	(47)	(40)	**50**	**(40)**	45
On-time arrivals (average deviation from scheduled times)						
General freight business	minutes	96	172	**149**	**243**	134
Export coal	minutes	17	71	**72**	**127**	65
Export iron ore	minutes	9	195	**167**	**24**	150
Rail network availability	percentage			**91**	**92**	92
Market segment competitiveness						
Volume and revenue growth						
Commodity classification						
General freight business	mt	84,7	81,0	**80,6**	**63,4**	76,6
Export coal	mt	72,0	72,5	**74,9**	**66,9**	73,2
Export iron ore	mt	58,4	58,9	**59,5**	**53,0**	59,0
Total volumes	mt	215,1	212,4	**215,0**	**183,3**	208,8

Operational management

Although Freight Rail continued to provide transportation of commodities during alert levels 4 and 5 of the COVID-19 lockdown, the quantities of commodities transported were not sufficient to meet the budgeted volumes during the financial year. The unprecedented operating environment was compounded by a significant increase in security challenges throughout the year and adverse weather conditions in the last months of the financial year. Community unrest disrupted train operations and caused damage to the network and rolling stock assets.

Freight Rail operations management is underpinned by the Corridor Operating Model. At the centre of the corridors' operations is the Operations Command Centre, which integrates tactical objectives and plans to ensure coordinated rolling stock, maintenance slots, human resources, and capital allocation and deployment across all operating corridors of the system.

Performance commentary

The required restrictions imposed by the pandemic resulted in reduced production levels in the economy contributing to reduced demand for transport services, particularly in the first half of the financial year. Freight Rail volume performance was lower than the prior year, reflecting a decrease of 13,70% to 183,29 mt (2020: 212,4 mt). Early in the financial year, Freight Rail had developed possible volume scenarios and implemented interventions to mitigate the impact. The 183,29 mt performance fell within the Middle Road scenario and the Worst Case scenario of -160 mt was averted. The reduced volumes transported have had a negative impact on all volume-based operational performance indicators.

Export coal

Volumes declined by 7,76% to 66,9 mt (2020: 72,53 mt), which was 10,72% below the target of 74,93 mt. The performance deviation can be attributed to tippler breakdowns at the Richards Bay Coal Terminal, derailment incidents, and the undersupply of 22E locomotives due to the 1 064 contractual challenges.

Export iron ore

The 53,0 mt conveyed in 2021 declined by 9,77% (2020: 58,85 mt), and was 10,76% below the budget of 59,50 mt. The performance deviation is largely due to the impact of COVID-19, which prevented the Port of Saldanha from operating at more than 60% initially and only reaching full capacity by September 2020. Operational failures such as derailment incidents also reduced capacity. This was aggravated by the temporary closure of Olifants River Railway Bridge due to unsafe infrastructure conditions; the condition of the network that resulted in a significant number of speed restrictions being upheld on the line; tippler challenges; and rolling stock reliability.

General freight

Volumes reflected a decline of 21,72% to 63,4 mt railed (2020: 80,99), and 21,32% below the target of 80,58 mt. Other than the impact of COVID-19, factors contributing to the general freight tonnage performance included derailment incidents, increased theft and vandalism across all corridors, persistent locomotive failures and reliability issues, network speed restrictions, and tippler and offloading challenges at various ports.

Freight Rail transported 517 889 TEUs in key corridors compared to 660 894 TEUs transported in the prior year – excluding Eskom containers. The number of cars transported was 8 434 import units and 80 381 units destined for export in comparison with the prior year performance of 35 932 and 99 754 units, respectively.

Looking ahead

Freight Rail will:

- Further standardise and implement proactive security measures to protect assets (i.e. rail infrastructure, rolling stock, freight trains in transit, yards, buildings, people, etc.) and prevent unauthorised entry into the yards by:
  - Identifying safe zones for the staging of trains;
  - Fencing yards, substations and relay rooms;
  - Installing closed circuit television cameras to improve site monitoring in buildings, substations and relay rooms;
  - Improving access control in buildings, substations and relay rooms;
  - Deploying drones and supporting rail technologies in identified crime hotspots; and
  - Replacing copper-based overhead traction equipment with tiger wire to discourage cable theft.
- Implement rail network renewal programmes with strict adherence to maintenance standards to improve the network condition.
- Ensure adherence to network renewal cycles with the replacement of worn rails, turnouts and sleepers per corridor to improve train slots capacity.
- Implement strategic interventions to reduce incidents of community unrest.
- Implement a safety strategy in accordance with the safety grading system to:
  - Inculcate a positive safety culture through the Visible Felt Leadership Programme, task observation plans, management walkabout plans, management engagement sessions, the reporting of unsafe acts and conditions, continuous improvement initiatives and the safety awareness programme;
  - Empower employees and supervisory grades to create a conducive and safe work environment: functional and safety training plans; safety communication; and speed monitoring programmes; and
  - Manage human factor fatigue risks, fit-for-duty programmes, a medical surveillance programme, an overtime management plan and a vacancy management plan to improve safety compliance and performance.
- Develop people through training spend to close the gap in critical technical skills.

Operations excellence

Below-target volumes resulted in performance of most operational efficiency KPIs being unfavourable compared to the prior year and relative to budget for the year.

Locomotive utilisation

Unfavourable general freight, export coal and export iron locomotive utilisation performances were mainly due to concurrent utilisation of either new or less efficient old locomotives; non-delivery of budgeted volumes; and insufficient network infrastructure availability due to theft and vandalism during the COVID-19 levels 4 and 5 lockdowns. Shortages of locomotives due to non-availability of spares (1 064 disputes and local content issues) constrained performance, particularly on NorthCor.

Cycle times and wagon turnaround times

Export coal

The cycle time for export coal deteriorated to 69 hours (2020: 62,4 hours) against the target of 64 hours. This measure was significantly affected by locomotive undersupply and reliability that led to an imbalance in the system and contributed to major delays. Other factors negatively impacting performance were cable theft on mines' feeder lines that led to in-section delays and yard blockages; closure of mines during COVID-19 levels 4 and 5 lockdowns and less volume tempo as a result of operation occurrences – such as derailments, unavailability of the network and locomotives – contributed to the standing of wagons. The Ermelo yard derailment also negatively influenced the cycle time.

Export iron ore

The cycle time for export iron ore deteriorated to 110 hours (2020: 95 hours) and was substantially higher than the target of 88 hours. The cycle time was severely impacted by the closure of the mines during periods of active COVID-19 lockdown restrictions; reduced operational capacity at the port; temporary speed restrictions; derailment incidents; a locust plague; and wash-aways during a period of heavy rains.

General freight

General freight wagon turnaround time deteriorated to 11 days (2020: 9,8 days) and was higher than the target of 9 days due to temporary speed restrictions imposed on the lines; cable theft incidents that resulted in disruptions and unplanned maintenance; multiple changes in deployment; and the unreliability of both electric and diesel locomotives.

Density

Density is a function of volumes transported over the rail route network. The lower than planned volumes on export coal, export iron ore and general freight negatively impacted the density performance on all corridors.

On-time departures (OTD) and arrivals (OTA)

The OTD performance is a result of the replanning of trains when there are deviations. The process of deviation management often involves collaborations with customers.

OTA performance on export coal, export iron ore and general freight was negatively impacted by deterioration of cycle and turnaround times and high in-transit disruptions.

Looking ahead

The focused implementation of "Must Win Battles" will continue to form the core of operational plans. Focus areas include, but are not limited to:

Operating models

- Review Natcor's operating model to unlock capacity, absorb disruptions and improve quality of service rendered to customers. The scale of disruptions on Natcor in the form of theft of rail infrastructure equipment, power outages and locomotive unreliability has resulted in the train service running at a rate double the service design. The increasing of the train length on Natcor is linked to reducing the cost of the business on the corridor and optimising volumes railed using few slots.
- Containers: Operationalise back-of-port facilities and near dock facility Kingsrest Buffer 2. Containers are arriving late at the port which implies short shipment of the export consignment (cost to the customer, quality of service); wagons standing under load (destroying capacity); and vessel delays waiting for rail containers (cost to the port and shipping line). The intention of reviewing the operating model is to minimise the impact on the customer by absorbing some of the disruption through railing export containers early.
- Grain: Implementation of Kroonstad Grain Hub to accelerate the migration of grain volumes from road to rail.
- Running bypassing trains in Ermelo to avoid the dwell in the yard – Improve number of trains that are bypassing Ermelo yard to avoid the dwell and double handling of trains during shunting, while preparing the trains to depart after staging in the yard.
- Exports: Increase train length of chrome trains to realise maximum volume throughput.

Wagons

- Reduce cycle times on the export coal, chrome and general freight coal flows to meet the cycle design standard.
- Implement the chrome wagon standardisation initiative to improve wagon capacity and thereby increase volumes.
- Roll out identified continuous improvement interventions to reduce wagon dwell times in key consolidation yards.

Locomotives

- Implement the 22E locomotive with transition vehicles on NorthCor to augment the high-failing 10E locomotive to improve locomotive reliability and traction power.
- Deployment of 100 22E locomotives with an electronically controlled pneumatic braking system as per B-Fleet for locomotive replacement plan on NorthCor.

Crew

- Implement a revised operating model that focuses on people optimisation and diesel locomotive working by:
  - Redeploying surplus personnel (train crew and yard);
  - Multiskilling train crew; and
  - Deploying diesel locomotives on rail sections prone to theft and vandalism of overhead traction equipment.

Infrastructure

- Finalise the approval of the Overvaal Tunnel 2 project to mitigate the risk for total closure of the line when incidents occur.
- Conduct maintenance of the rail network to enable operations to run the designed number of trains per section by:
  - Upgrading the Krugersdorp to Mafikeng line for the deployment of 44D locomotives;
  - Reinstating the Sentrarand to Leeufontein line (link from Sentrarand to Waltloo and Capital Park); and
  - Fixing the automated/remote signalling system around Sentrarand to improve transit times of trains.

Sustainable development outcomes

Table 7: Overview of sustainable development outcomes against KPIs

Key performance area and indicator	Unit of measure	2019 Actual	2020 Actual	**2021 Target**	**2021 Actual**	2022 Target
Sustainable development outcomes						
Human capital (employment and transformation)						
Employment equity	%	88,8	89,8	**90,0**	**90,6**	90,0
Female employees	%	29	30,50	**35,7**	**31,17**	35,7
People with disabilities	%	2,9	2,9	**1,5**	**2,87**	2,5
Training spend	% of personnel cost	2,9	2,8	**3,1**	**2,1**	3,1
Employee turnover	%	3,7	3,8	**5,0**	**3,4**	5,0
Employee headcount	permanent	26 312	26 053	**27 529**	**25 617**	26 995
Risk, safety and health						
Cost of risk	% of revenue	6,2	6,8	**6,2**	**7,0**	6,2
Disabling injury frequency rate	rate	0,9	0,88	**0,88**	**0,77**	0,88
Safety incidents	number	280	379	**245**	**217**	191
Derailments – mainline	number	65	88	**77**	**70**	62
Derailments – shunting	number	153	147	**129**	**122**	107

Human capital (employment and transformation)

- Freight Rail ended the 2020/21 financial year with a permanent headcount of 25 617 employees.
- Freight Rail sustained employment equity performance, with black employees representing 90,6% (target: 90%) of the total employee base thus improving on the previous year's performance of 89,8%. Female employees represented 31,17% of the workforce and people with disabilities represented 2,87% of the total employee base.
- Training spend in 2021 was 2,1% of personnel cost (2020: 2,8%) and below the target of 3,1% primarily due to restrictions imposed by the pandemic.

Skills development

Despite the difficult operating conditions brought about by COVID-19 and the temporary closure of most training centres – some of which were utilised as quarantine sites – Freight Rail continued to focus on the delivery of core training initiatives and learning solutions to support the business. Alternative training delivery methods were pursued and recovery plans were implemented to close the safety-critical and safety-related skills backlogs in accordance with the Railway Safety Regulator requirements. Although the overall training numbers are below prior year levels, other training-related targets were achieved. The overall training numbers are below prior year levels and below the target as a result of lockdown regulations that Freight Rail needed to adhere to in order to curb the spread of the coronavirus. Freight Rail remains committed to ensuring a skilled workforce in the years ahead.

Table 8: Number of engineers and technicians on the EEP

Training area	Actual 2020	Target 2021	**Actual 2021**
P1 and P2 learners	200	200	**179**
Engineering bursars	60	60	**60**
Young professionals in training	150	145	**156**

Table 9: Youth employment and development strategy

Employment/ development	Actual 2020	Target 2021	Actual 2021
Youth employed as % of total employees	32,0	No target set	**28,0**
Youth developed as % of all employees trained	44,8	No target set	**37,0**

Risk, safety and health

Cost of risk

The 2021 cost of risk as a percentage of revenue was 7% compared to 6,8% achieved in the prior year. The target of 6,2% was not achieved. The high cost associated with safety incidents as well as a reduction in revenue contributed to the increased cost of risk measure.

Disabling injury frequency rate (DIFR)

Freight Rail achieved a DIFR of 0,77, which is better than the global industry benchmark of 1 (index below 1 is favourable). The performance was within the tolerance limit of 0,88 and an improvement from 0,88 in 2020.

Number of safety incidents

The overall number of balanced scorecard rail incidents decreased by 22% year on year. There were 217 incidents in 2021 compared to 278 in 2020 and better than the target of 245.

Number of mainline derailments

The number of mainline derailments decreased by 22% from 88 in 2020 to 70 in 2021. The performance is better than the threshold of 77.

Number of shunting derailments

The number of shunting derailments decreased by 17% from 147 in 2020 to 122 in 2021. The performance is better than the target of 129.

The two train-on-train collisions were primarily caused by failure to adhere to verbal authorisation protocols; such authorisations are brought about by cable theft. Most of the shunting derailments occurred at the points as a result of not complying with rules pertaining to the operation of hand-operated points and trains running through points not set for intended movement. Mainline derailments were mainly caused by inadequate track conditions as a result of inadequate maintenance and a shortage of replacement components.

Key risks and mitigating activities

Enterprise risk management practices ensure that Freight Rail identifies both strategic and operational risks and that measures to manage these risks and their impact are implemented, while simultaneously identifying emerging risks and harnessing opportunities when they do arise. The top 10 risks identified during the year under review and the mitigating activities implemented to reduce these risks are indicated in the table below.

Table 10: Top 10 risks

	Risk description	Key mitigation activities
1.	**Financial sustainability risk** Inability to remain financially self-sustainable and restore stakeholder confidence	• Developed operational plans for corridors to optimise commodity mix and high yield flows to improve volume tempo and increase revenue generation • Corridor management engaged customers to secure orders and on-board new customers (including small players) to secure additional volumes • Implemented a cost-compression exercise to manage costs within approved budget and affordability levels • Continued cash forecasting scenario analysis and initiatives to improve cash generation • Focused stream on Prasa aimed at resolving outstanding debt and commercial arrangements • Continued completion of financial control self-assessments to improve the financial control environment
2.	**Funding risk** Inability to generate sufficient funding to sustain and expand capital programme requirements	• Reallocated/reduced capital in line with affordability to manage the risk of insufficient cash generated from operations to fund sustained and expansionary capex programme • Continuously evaluated the return on investment and cash interest cover to ensure they are with debt covenants • Participated in engagements with funders together with Group Treasury to negotiate pricing and funding requirements • Identified programmes for alternative funding models (private sector participation, off balance sheet financing, asset-backed funders, etc.) • Investigated alternative ways to attract partnerships for the funding of wagons and rolling stock beyond the existing customer arrangements
3.	**Rail network infrastructure risk** Inability to provide a reliable and safe infrastructure for the passage of trains, threatening Freight Rail's ability to achieve volumes and threatening its financial sustainability	• Implemented the annual copex and opex programme (as part of the seven-year programme) recommended by Deutsche Bahn to address the maintenance backlog and sustain the network to "A" maintenance standard • Initiated programmes to design and install extreme weather drainage system for extreme weather conditions (culverts,embankment and formation stabilisation)
4.	**Security risk** Increased security incidents, leading to Freight Rail's inability to secure its assets and deliver a reliable service to customers	• Customised Freight Rail security improvement plan for each corridor • Increased reliance and partnerships with law enforcement agencies to ensure an integrated approach to deal with the increased levels of tampering, damaging and destruction of Freight Rail's essential infrastructure • Formalised the rail sector's extended public works programme (labour-intensive programmes for communities)
5.	**Procurement risk** Lack of coordinated approach in the management of procurement processes, impacting the effective delivery of services to business (newly identified risk)	• Executed the demand plans according to priority procurement events • Developed a monitoring system for all active procurement transactions • Implemented the revised Procurement Procedure Manual (PPM) to raise awareness of the Transnet procurement procedure • Automated the procurement process to eliminate influence within the process, with the advantage of recorded data/traceable events • Implemented governance, local content and B-BBEE assurance on procurement events below R2 million • Implemented a document and data management system
6.	**Market growth risk** Inability to effectively service customers, leading to poor market penetration and loss of market share	• Created capacity ahead of demand by identifying and developing new markets to develop the rail and port capacity required • Tracked and monitored Freight Rail's initiatives to address service issues identified in its customer satisfaction surveys • Repositioned the customer interaction centre • Aligned rail and port capacity to short-term and long-term demand • Created partnership models for targeted markets • Rolled out the customer relationship management project as per time lines • Procured and implemented a long-term planning tool (i.e. capacity and simulation planning tool and execution monitoring and deviation management tool)

	Risk description	Key mitigation activities
7.	**Information and communications technology risk** Inadequate information and communication technology infrastructure (including cybersecurity controls) to enable the business to achieve its objectives	• Commenced with the implementation of an enterprise information management programme, which implements strategy, governance and principles for enterprise-wide information management • Conducted an audit with Transnet Internal Audit to ensure compliance with the Protection of Personal Information Act of 2013 • Implemented the enterprise architecture, as per Best Practice TOGAF – The Open Group Architecture Framework (Business, Information, Application and Infrastructure) • Research conducted on the emerging technologies (4IR) to improve current ICT services to the business in view of the remote working requirements • Implemented the Network Connectivity Project (Telecomm)
8.	**Pricing risk** High cost of freight services is rendering prices uncompetitive (Competition Commission Act, 1998 and the envisaged Economic Regulation of Transport Act)	• A decision was made that the review of the Profitable Costing Model (PCM) system and its enhancement would form part of the broader project considering the corridor approach, potential rail regulation and requirements • The train services on low-density lines were increased in order to execute the order book, e.g. Tzaneen to Durban line and introduction of volumes from Polokwane • The North East Corridor introduced the LSS Project (Phalaborwa and Komatipoort dwell times) to close the gap in cycle times on trains (efficiency improvements) • Stakeholder management plan established and implemented to deal with regulations and policies that prohibit the advancement of rail
9.	**Rolling stock risk** Unavailability and unreliability of locomotives (including the impact of 1 064 locomotive renegotiations), leading to inability to achieve volume targets	• Engaged with National Treasury regarding the localisation requirements, and the request for National Infrastructure Protection Plan requirements; approval has been granted • Old locomotives were run to failure, cannibalisation and components reused as part of the fleet maintenance process to keep balance of fleet in operation. Revenue has been generated while old locomotives continue to be retired • Old design Lucchini wheels on the ore and coal heavy-haul lines have been replaced, and continue to be replaced
10.	**Prasa risk** Unavailability and unreliability of the Prasa network, leading to the reduction in rail capacity, impacting on Freight Rail's market share	• Monthly meetings are conducted to ensure improvement of the signalling and train control technologies • Interface meetings between Freight Rail and Prasa have been initiated to enforce the SANS 3000-2-6 standard • Collaboration between the parties for contractor approval process and potential for cross acceptance of products and suppliers (including contractors) has taken place. • Information regarding the safeguarding of ferrous metals and essential infrastructure is shared with Prasa safety and security teams • Debt-related matters between Prasa and Freight Rail has been escalated to top management structures of Transnet and Prasa for resolutions on financial recovery models • Benchmarking of tariffs and pricing as well as access charges for slot utilisation has been completed

Opportunities

Freight Rail is committed to rail sector reform to improve the efficiency, competitiveness and sustainability of the sector. As the immediate challenges are addressed in the "Fix" and "Optimise" phases of the strategy journey, opportunities will be sought and pursued to position the business for growth. Initiatives that have been identified include:

- Leveraging private sector partnerships or strategic partnerships for new market development:
  - Explore alternative ownership and financing models for wagons, terminals and sidings; and
  - Successfully execute branch lines transactions.
- Collaborating with customers and industry stakeholders to implement supply chain solutions such as back-of-port facilities and improved utilisation of terminal facilities.
- Entrenching the phased implementation of the rail network and operations accounting and commercial separation to embrace rail reforms and build the foundation for private operator access to the network.
- Strengthening existing operational relationships with neighbouring countries to increase volume throughput and promote regional integration.

Abbreviations and acronyms

Capecor	Railway line between Johannesburg and Cape Town
copex	Capitalised maintenance
CWIP	Capital work in progress
DoT	Department of Transport
DPE	Department of Public Eenterprises
EBITDA	Earnings before interest, tax, depreciation and amortisation
Gtkm	Gross tonne kilometre
KPI	Key performance indicator
mt	Million tonnes
Natcor	Natal corridor line from Rietvlei in Gauteng to the Durban Harbour in KwaZulu-Natal
Ntkm	Net tonne kilometre
OD	Operating Division
opex	Operating expenditure
Prasa	Passenger Rail Agency of South Africa
SADC	Soutern African Development Community
Southcor	South corridor line linking Port Elizabeth and East London
TEU	Twenty-foot equivalent unit