The Importance of Rail Freight Transport In Gauteng

Gauteng Department of Public Transport, Roads and Works

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RAIL FREIGHT TRANSPORT IN GAUTENG

Preface

This report follows appointment by the National Department of Transport and the Gauteng Department of Public Transport, Roads and Works (DPTRW) to "evaluate the usage and potential for rail freight in Gauteng", as an extension of the Freight Databank research project.

The project was managed by TMT Projects (Pty) Ltd, Kempton Park, Gauteng. Joint project leaders were Ray Sowman and Norman Manyelo, with research and expert input from Nick Porée (road transport), Allen Jorgensen (rail freight transport), and field research undertaken by Aubrey Gumede, Denzil Rockman, and Brian Jeary.

The project team are appreciative of the appointment and trust that the report will form the basis for constructive interaction between the DPTRW, Spoornet and where applicable, local authorities, to jointly plan better utilisation of rail freight services and facilities.

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RAIL FREIGHT TRANSPORT IN GAUTENG

Executive Summary

The rail freight system of Gauteng is a crucial element of the transportation system and is still a significant factor in the movement of freight within Gauteng and through the Province to destinations in the North, East, South and West.

Gauteng is the hub of railway operations in South Africa and while only about 1 250 route kilometres of the overall countrywide 21,000 kilometre of rail track is within the province, eight important mainline and secondary mainline arterial routes radiate from Johannesburg, Pretoria and Vereeniging to neighbouring provinces.

There are, in addition, numerous railway lines serving some 32 industrial areas with over 1 000 connecting private sidings. In recent years, with the dispersion of residential and industrial development, rail facilities have not been provided to many new industrial areas. This is a distinct departure from earlier town planning practice, where a rail facility was normally regarded as a prerequisite for an industrial location.

There are very few truly typical light traffic density branch lines in Gauteng. Most branch lines as such, are suburban commuter lines to townships such as Naledi in Soweto, Kwesine in Tokoza, Alberton and others. Most of the freight railway lines provide a transit service through the province.

In recent years with the development of road transport, many new industrial townships have been located far from railway lines, with no connecting lines or private rail sidings being provided. At the same time, many of the older industrial areas have been redeveloped or abandoned with a significant number of access lines and private sidings now either disused or closed.

In the Ekurhuleni Metro area alone (encompassing Germiston, Kempton Park, Alberton, Benoni, Boksburg, Springs and Nigel) it is reported that of about 750 private sidings, only about 300 are serviceable and even less are used regularly. The introduction of international containerisation to South Africa in 1977 reduced the necessity for many private sidings, as final delivery from a rail load could be made by road. However, with the unprecedented growth in road transport over the past 10 years, and the accompanying problems of traffic congestion there is need to re-evaluate the role that private sidings could play to provide a door-to-door rail delivery service.

Railway station and siding facilities are clearly extensive in Gauteng, but many have been allowed to deteriorate and fall into disrepair. Due to the inaccessibility in many instances of Spoornet land and facilities to private sector operators, the private sector has developed logistic networks to the exclusion of these railway facilities.

As part of its functionality in terms of the NLTTA, GDPTRW needs to take a holistic view of all freight transport facilities in Gauteng, and establish their value within the context of an overall "Freight Plan" for the province. Considering the established freight transport corridors of Gauteng, a short, medium and long term utilisation plan for railway stations, sidings and facilities should be developed jointly by GDPTRW and Spoornet.

In Gauteng rail carries 49 million tons of cargo (27%) annually while road carries 130 million tons (73%). Rail is therefore a significant provider of transportation capacity; however, its market share is declining. It is necessary for the province to monitor this situation. By virtue of the provincial requirement in terms of the NLTTA to provide an integrated modal transport and freight transport plan, it will be necessary for the province to monitor the market share of freight cargo carried by the different modes of freight transport. The Gauteng Freight Transport Databank will facilitate this process.

Spoornet has consolidated its yard operations in recent years. Many smaller yards including those serving industrial areas such as Benoni South have been closed. Others such as Natalspruit have fallen into disuse. Sentrarand was designed to supplement and even replace some of the smaller yards but with the demise of general freight traffic and the use of private sidings, this has accelerated.

The substantial reduction in general freight traffic, has also resulted in fewer industrial area shunting activities. This has reduced the need for many locomotives formerly employed in these services.

The reduced shunting activity and reduced shunting yard areas being utilised, means that this land could be made available for other purposes. Many of these land areas are within or adjacent heavily developed or built up areas, and could possibly be utilised to develop new railway facilities in an effort to alleviate road cargo traffic congestion; or, provide land area for road traffic facilities (e.g. truck stops, or intermodal facilities).

The province should request Spoornet not to proceed with any development plans for such land areas, before engaging GDPTRW in respect of establishing opportunities for potential road traffic facilities, which could extend beyond freight, to public transport. The NLTTA empowers the province with such a mandate.

Some three years ago, national government at Cabinet level approved a general policy to encourage greater use of rail transport. This resulted in a complete evaluation of the assets, liabilities and market status of Spoornet the state run railway. The recently announced R15 billion recapitalisation programme is the first major state intervention to address declining rail cargoes. For Gauteng Province to ensure maximum benefit from this railway investment programme, joint planning with Spoornet will be necessary.

An increase in rail market share assumes that the substantial investment planned for rail infrastructure, rolling stock and locos will facilitate a significant improvement in rail service delivery. It must be appreciated that as Spoornet's investment programme has barely commenced, there will be some delay before an overall improvement in service delivery is evident. In this respect Spoornet are likely to follow a targeted marketing approach, concentrating initially on specific commodities or areas. The province need

to ensure that Spoornet's targeted areas for improved performance are in line with provincial developmental plans.

Please note: This study contains certain information which is now dated. It has been revised in places but not in totality. Nevertheless, it is a useful reference study for rail transport in Gauteng as it was in 2004 and how it can be projected ahead in the future.

Material appearing in red and italics has been added to the original text to bring it up to date where the information is available. Photographs that appear in the text are from low-resolution scans and not suitable for copying. Should a reader require high quality scans, the author can be contacted at his website address.

AA Jorgensen
26 January 2014

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LIST OF ACRONYMS

AC	-	Alternating Current
CKD	-	Crated-Knocked-Down
CTC	-	Centralised Traffic Control
CX	-	Container Express
DC	-	Direct Current
EASTCON	-	East Rand (Donnattar) Container Terminal
EPZ	-	Export Processing Zone
GDPTRW	-	Gauteng Department of Public Transport, Roads and Works
HA	-	hectare
KMS	-	Kilometres
KZN	-	KwaZulu-Natal
MIPD	-	Motor Industry Development Programme
NATCOR	-	Natal Corridor
NLTTA	-	National Land Transport Transition Act
PRETCON	-	Pretoria Container Terminal
PX	-	Parcel Express
SADC	-	South African Development Community
SARSH	-	South African Railways and Harbours
TEU	-	Twenty Foot Equivalent (Container) Unit
VALCON	-	Viljoensdrift Container Terminal

RAIL FREIGHT TRANSPORT IN GAUTENG

1. INTRODUCTION

The rail freight system of Gauteng is a crucial element of the transportation system and is still a significant factor in the movement of freight within Gauteng and through the Province to destinations to the North, East, South and West. A considerable tonnage of cargo enters the province from the ports of Durban, Cape Town and the Eastern Cape as well as a lesser tonnage from the port of Maputo. The rail line from Gauteng to the North, connecting with national railways of Zimbabwe at Beit Bridge is also a significant corridor for export cargo from South Africa and import cargo from neighbouring SADC countries to the North.

This review of rail freight operations in Gauteng province, is intended to provide an overview of the infrastructure, operations and current activities involving destinations within the province.

A separate section of the report describes the activities of the inland dry port container terminal at City Deep and the other terminals located within Gauteng which serve as origins and destinations for significant container import and export traffic, in support of Gauteng based industry.

This review gives a broad overview of the extent of the rail operations, user industries and some of the features of the infrastructure and the supporting services that are essential to the future redevelopment of the railways in Gauteng.

Gauteng is the hub of railway operations in South Africa and while only about 1 250 route kilometres of the overall countrywide 21,000 kilometre of rail track is within the province, eight important mainline and secondary mainline arterial routes radiate from Johannesburg, Pretoria and Vereeniging to neighbouring provinces.

There are, in addition, numerous railway lines serving some 32 industrial areas with over 1 000 connecting private sidings. In recent years, with the dispersion of residential and industrial development, rail facilities have not been provided to many new industrial areas. This is a distinct departure from earlier town planning practice, where a rail facility was normally regarded as a prerequisite for an industrial location.

There are very few truly typical light traffic density branch lines in Gauteng. Most branch lines as such, are suburban commuter lines to townships such as Naledi in Soweto, Kwesine in Tokoza, Alberton and others.
The Witwatersrand suburban commuter area includes some 600 route kilometres of lines, some dedicated and some shared with goods and other trains. About 1 000 suburban commuter trains run each day and they carry about 250 million passengers each year.

Commuter numbers have declined in recent years because of competition from privately owned motor vehicles, Kombi-taxis and deteriorating rail services. This trend can be reversed with an investment in new rolling stock and the promotion of convenient intermodal interfaces.

2. HISTORICAL DEVELOPMENT

The development of rail freight transport in Gauteng can be traced back to the discovery and exploitation of gold along the Witwatersrand in the 1880's which led to the establishment of villages, towns and cities along an 80 km east-west axis from present day Springs to Krugersdorp to the west of Johannesburg.

A concession to construct a railway from Lourenco Marques (now Maputo) in Mozambique to Pretoria was first approved in 1887 and finally opened in 1894. However, the first railway in Gauteng predated this by three years. This was the so-called Rand Tram, which ran from Boksburg to Johannesburg and opened as the first railway in the Transvaal in 1890. The main purpose of this line, apart from passenger travel, was to bring coal from mines in the Boksburg area to the various gold mines that were developing along the Reef.

At the same time, railway lines from the Cape and Natal were also being constructed and the Cape line was the first of these to reach Germiston in 1892. This was followed by the line from Durban in 1895. Connections were made shortly thereafter with East London and Port Elizabeth. The first direct connection with territories to the north was by way of Mafikeng when that line was opened in 1912. The line north from Pretoria to Pietersburg (Polokwane) reached Messina (Musina) in 1914. But it took another 60 years before this line was extended to provide a through route to Zimbabwe and countries to the north.

The development of industry and railways in Gauteng was expedited with the ending of the Anglo-Boer War and the relative stability that followed. The creation of the State-owned South African Railways and Harbours (SAR&H) was an amalgamation of the various railways that had developed; namely from the then Cape, Natal, Free State and Transvaal rail operations in 1910. This created an integrated railway system linking all areas of South Africa.

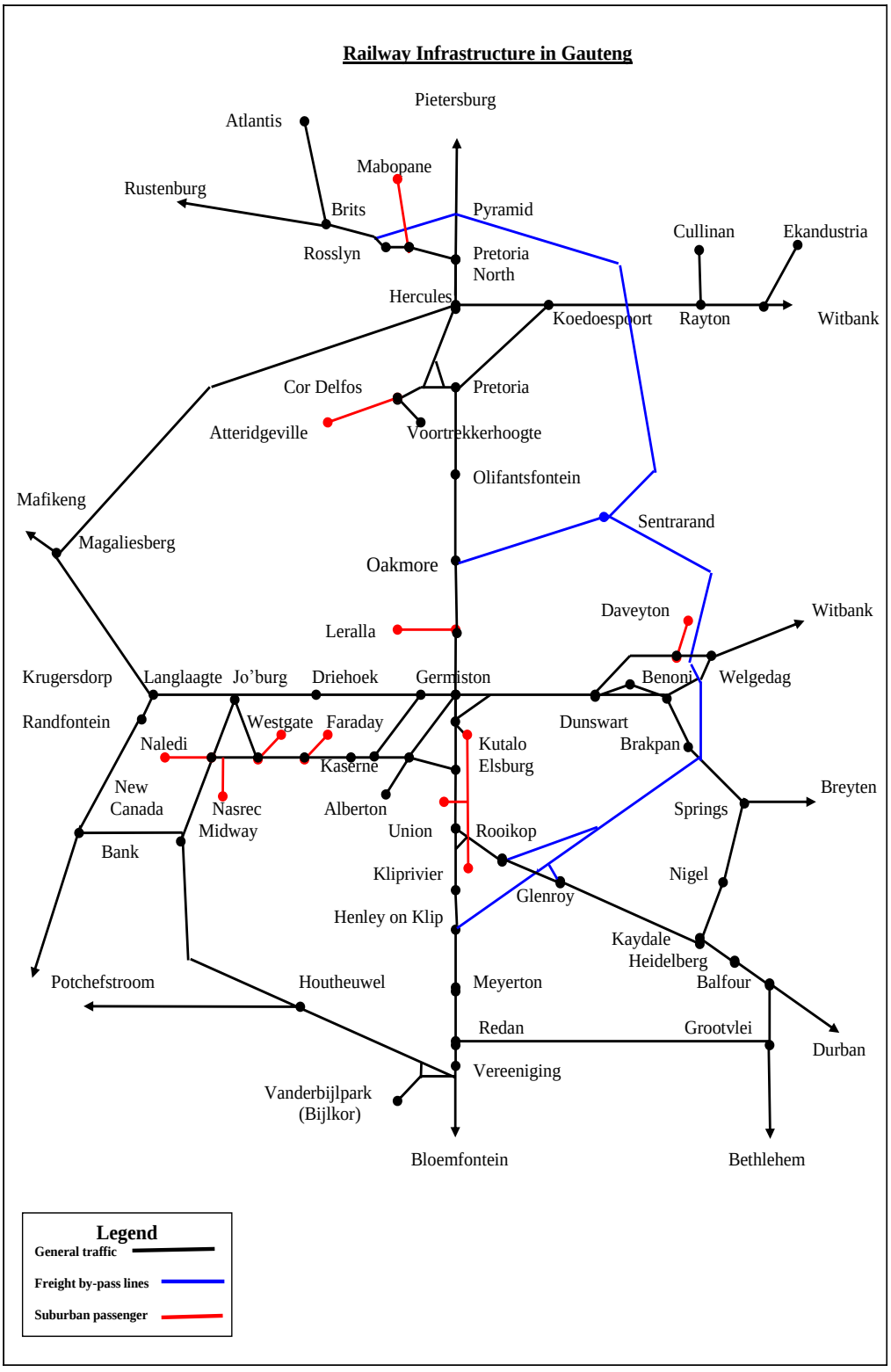
During the period until the end of World War 2, further railway development was rapid and additional arterial and freight "by-pass lines" (or avoiding lines) were opened. The first dedicated industrial areas having rail access, such as Industria, Industria West, Newtown, Selby and South Germiston were developed during this period. This process continued and after World War 2 many new industrial townships were developed. These included Isando, Chamdor, Anderbolt, Benoni West, Wadeville and Alrode, to name just some.

In recent years with the development of road transport, many new industrial townships have been located far from railway lines with, no private rail sidings being provided. At the same time, many of the older industrial areas have been redeveloped or abandoned with a significant number of access lines and private sidings now either disused or closed.

In the Ekurhuleni Metro area alone (encompassing Germiston, Kempton Park, Alberton, Benoni, Boksburg, Springs and Nigel) it is reported that of about 750 private sidings, only about 300 are serviceable and even less are used regularly. The introduction of international containerisation to South Africa in 1977 reduced the

necessity of many private sidings as final delivery from a rail load could be made by road.

The current layout of the main rail lines in Gauteng is shown schematically below.


Railway Infrastructure in Gauteng
Pietersburg
Atlantis
Mabopane
Rustenburg
Brits
Pyramid
Cullinan
Ekandustria
Rosslyn
Pretoria North
Hercules
Koedoespoort
Rayton
Witbank
Cor Delfos
Pretoria
Atteridgeville
Voortrekkerhoogte
Olifantsfontein
Mafikeng
Sentrarand
Magaliesberg
Oakmore
Daveyton
Witbank
Leralla
Krugersdorp
Langlaagte
Jo'burg
Driehoek
Germiston
Benoni
Welgedag
Randfontein
Westgate
Faraday
Dunswart
Naledi
Kutalo
Brakpan
Kaserne
Elsburg
New Canada
Nasrec
Alberton
Springs
Breyten
Midway
Union
Rooikop
Bank
Kliprivier
Nigel
Glenroy
Henley on Klip
Kaydale
Heidelberg
Potchefstroom
Houtheuwel
Meyerton
Balfour
Redan
Grootvlei
Durban
Vereeniging
Vanderbijlpark
(Bijlkor)
Bloemfontein
Bethlehem
Legend
General traffic
Freight by-pass lines
Suburban passenger

Gauteng Historic

Rand Tram near Johannesburg *(Text reference: 3.1.4)*

Opening of railway across Vaal River in 1890 *(3.1.7)*

First train into Pretoria Station *(3.1.2)*

Opening of Durban - Johannesburg line near Heidelberg *(3.1.6)*

Train from Cape Town to Johannesburg at Potchefstroom *(3.1.10)*

3. FREIGHT LINES IN GAUTENG

3.1 Inter-provincial arterial lines

(Connecting Gauteng with adjacent Provinces)

The tonnage originating and received on each of the line sectors described in this section is shown in Appendix 1.

3.1.1 Germiston – Pretoria – Polokwane and Beit Bridge Main line

This 634 route kilometre (km) line serves the Gauteng and Limpopo provinces, as well as international traffic to Zimbabwe and countries to the north. The 122 km section between Germiston and Hemmanskraal is used also by Metro suburban passenger trains, as well as goods trains serving local on-line (i.e., adjacent a railway line) industries and certain inter-provincial services.

While some through goods trains use this section, the majority are routed on the freight bypass lines via Sentrarand marshalling yard. The 77 km section between Germiston, Pretoria and Sphinx (Pyramid South) is electrified on the old 3 000 volt DC system (3 kV), while the section north to Polokwane is electrified at 25 000 volts AC (25 kV). The length of line within Gauteng itself is 123 kms, most of which is double track.

The section between Germiston and Pyramid South is controlled by CTC (Centralised Traffic Control), while northwards a computer driven Radio Train-Order system is used. An average of 10 trains per day operate in each direction north from Pyramid South, ranging from 40 wagon vacuum-brake trains to longer air-brake trains. Some trains terminate at Polokwane, but the majority continue to Beit Bridge or are routed to the lowveld via Tzaneen. A large marshalling yard at Pyramid South is used for routing trains from the Beit Bridge and Ellisras lines over the freight bypass lines and, for the changeover from DC to AC electric locomotives.

3.1.2 Pretoria – Witbank – Komatipoort Main line

Part of the Maputo Corridor rail route, this line serves local industries in Gauteng and Mpumalanga, as well as international traffic between South Africa and Mozambique. It also provides an alternative route for transit traffic such as chrome ore between the North West Province and KwaZulu Natal.

The main line to Maputo is 566 km long with 473 km in South Africa. The line runs via Rissik and Koedoespoort within the Pretoria area and 90 km of the line from Pretoria to Balmoral falls within Gauteng itself.

The South African portion of the route is electrified at 3 kV and reaches the Mozambique border at Komatipoort. The Pretoria – Witbank section has moderate to steep gradients and because of this, much of the very heavy goods traffic is routed via the Witbank – Welgedag section and to the Sentrarand yard and thence, to Pretoria or Pyramid South.

Train control on the Pretoria – Witbank section is by Centralised Traffic Control (CTC). Goods traffic on this section consists largely of coal moving westwards but a number of “fast” through goods trains also operate, running beyond to the lowveld and Mozambique border.

3.1.3 Apex – Welgedag – Ogies – Witbank Main line section

This line is 122 km long, of which the 40 km Apex to the Eloff section lies within Gauteng. It is used mainly for coal traffic originating in the Witbank area and directed to various destinations in Gauteng, Free State, North West and beyond. A significant portion of coal traffic is diverted at Welgedag to freight by-pass lines and Sentrarand yard, to avoid congestion in the busy Metro area.

The line is electrified at 3 kV, and is double track throughout. Train control is by way of Centralised Traffic Control (CTC). Both vacuum and air brake trains operate on this relatively level line. Block loads of coal generally are loaded to 50 or more air-braked wagons.

3.1.4 Krugersdorp – Johannesburg – Germiston – Springs: *and* D*unswart – Alliance – Welegedag, Dunswart – Apex via Range View, and Welgedag – Springs*

This is the route of the original Rand Tram and forms part of the present Metro suburban area. However, many intra-state goods trains use portions of these lines to serve local destinations including various industrial areas. The lines have a combined length of about 118 route km, and range from double to quadruple (4) track.

All Metro lines are electrified at 3 kV and train control is by way of CTC operated from George Goch, a Metro station between Johannesburg and Driehoek. Important industrial areas served by these lines are located at Chamdor (Krugersdorp), Industria (Johannesburg West), Germiston East and South, Boksburg East, Vulcania (Brakpan) and New Era (Springs). Important marshalling yards are situated at Langlaagte, Germiston and Springs.

3.1.5 Springs – Bethal – Breyten Secondary Main line

This line is 198 km long and serves the Mpumalanga highveld agricultural areas. The 47 km section from Springs to a point between Devon and Leandra is within Gauteng and it now provides a strategic route for traffic from the synfuels plant at Secunda, as well as forestry traffic from Eastern Mpumalanga.

The line is not electrified and is operated with diesel locomotives stationed at Springs. The line is single track and signalling is controlled by the Van Schoor tablet system. On normal days, five trains are operated in each direction daily and apart from bulk liquids originating at Secunda (via Trichardt station), pulpwood traffic from the Lothair area is routed via Springs to the large Enstra paper mill at Geduld.

3.1.6 Germiston – India and Union – Volksrust Main line

This line, referred to within the railways as Natcor (Natal Corridor) provides the link to the east coast ports of Durban and Richards Bay and as such, is the busiest general freight railway line in South Africa. Traffic to Kaserne and City Deep is routed via Union and India to the Rand Mineral line, while traffic to Germiston and the north is routed via Union to Germiston.

The line currently handles about 10 million tons of traffic per annum. It is used by import - export container trains, and domestic and import-export bulk traffic between KwaZulu Natal, Gauteng and other provinces, and countries to the north.

Of the 771 route km from Germiston to Durban, the 80 kilometre section to a point between Spruitrus and Fortuna (beyond Heidelberg) is within Gauteng. The line is double track and electrified at 3 kV throughout. The CTC signaling system is controlled from Standerton and up to 25 long distance trains utilize the line every day in each direction between the coast, other inland points, and Gauteng.

3.1.7 Union – Vereeniging – Bloemfontein and Cape Main line

This is the through route for traffic to and from East London (1 011 km), Port Elizabeth (1 103 km) and a significant portion of Cape Town traffic (routed to Bloemfontein, Noupoort and De Aar – 1 605 km). The first train from Cape Town to Johannesburg arrived via this route in 1892. The Gauteng section serves major industrial areas as far south as Sasolburg, which while being in the Free State, is considered to be part of the Gauteng industrial complex for this survey. The actual route kilometers of line in Gauteng, to the Vaal River, is about 55 km.

The line also serves major industrial areas such as Sasolburg in the Free State, and the Vaal Triangle. There are important sources of interstate and intrastate bulk traffic, both received and generated along the line within Gauteng at stations such as Union, Kliprivier, Henley-on-Klip and Meyerton. The line is electrified at 3 kV, double track throughout and controlled by CTC. To avoid the busy Metro area, many goods trains utilize the freight bypass route from Skansdam (north of Henley-on-Klip) towards Springs and Sentrarand.

3.1.8 Langlaagte and New Canada to Kaserne – Germiston (Driehoek) and; India Junction to Elsburg via Germiston South.

(Also known as the Rand Mineral line)

This line was originally constructed to serve the gold mines located to the south of the Rand Tram line between Germiston, Johannesburg and Langlaagte. It is within the Reef Metro suburban area but is an important freight line, serving container traffic from the east in and out of City Deep, and other industrial areas. Traffic from the west is routed from the south or west via Midway to New Canada, and from Langlaagte and then west via Crown.

Gauteng Railway Mainlines

Container train on KwaZulu-Natal mainline *(Text reference 3.1.6)*

Auto train on KZN mainline *(3.1.6)*

Tanker train northbound near Skansdam on Sentrarand freight by-pass line *(3.3.5)*

Mixed load train southbound near Skansdam *(3.3.5)*

Grain train at Groot Marico *(3.1.11)*

Loading containers at rural station *(3.1.11)*

This section comprises approximately 51 km of lines, and a significant portion is quadruple track. It is electrified at 3 kV and is controlled by CTC throughout. The large Kaserne marshalling yard serves the City Deep Container Terminal and the Kaserne goods sheds and former PX facility.

3.1.9 Langlaagte – New Canada – Midway – Lawley – Vereeniging alternative main line *and freight avoiding lines between Bank – Midway – Potchefstroom - Houtheuwel*

This line provides an alternative route from Johannesburg via Langlaagte and Midway to Vereeniging and points south. It is used by Metro suburban passenger trains in the urban and suburban areas but portions of the route are important for heavy mineral traffic from Northern Cape to Vanderbijlpark, Meyerton, Wadeville and other industrial areas in Gauteng. The section from Langlaagte to Vereeniging North is about 70 km in length, while the southern bypass from Vereeniging South to Leeuhof is 8 km in length.

This section is electrified at 3 kV, is double track and controlled by CTC. Metro trains operate over the route, excluding the southern bypass between Leeuhof and Vereeniging South. The sections from Bank to Midway and Potchefstroom to Houtheuwel are described elsewhere in this review.

3.1.10 Krugersdorp – Welverdiend – Potchefstroom Main line

This route is part of the Cape Main line serving the Northern and Western Cape. Through goods trains do not normally use the Potchefstroom – Krugersdorp section since it is relatively steeply graded on the southern approach to Randfontein. Most goods trains are routed over the Potchefstroom (Cachet) – Fochville – Houtheuwel line, where a connection is made with the New Canada – Vereeniging main line. Metrorail services extend to Randfontein.

The line between Krugersdorp and Welverdiend, junction of the important secondary line to Lichtenburg, is 63 km in length and is double track, electrified at 3 kV and controlled by CTC. The 12 km section from Krugersdorp to Randfontein forms part of the Metro section. The line crosses into the North-West Province at a point 5 km west of Welverdiend and east of Gatsrand.

3.1.11 Krugersdorp – Zeerust – Mafikeng Secondary Main line

Formerly providing the only international route between Gauteng, Zimbabwe and the north, this route is still vital for Botswana traffic. Because of its steep gradients, most traffic from Gauteng to north of Botswana is now routed via Beit Bridge. The route from West Rand Junction (2 km west of Krugersdorp, the junction of the mainline to Kimberley and the secondary line to Zeerust and beyond) to Mafikeng is 270 km in length, of which the first 40 kilometres to a point between Watershed halt and Vlakdrif, is in Gauteng itself.

The entire line is single track and diesel operated. The Van Schoor electric tablet system is in use* and the Millsite loco shed (near West Rand Junction) provides locomotive power for the line. There is also a medium-sized marshalling yard at Millsite (Waterval) where some trains for the line are made-up. Because of the steep gradients on the line, up to four diesel locomotive are used on most trains. An average of four trains run in each direction on weekdays over the line, hauling liquid

fuels and other commodities to Botswana and the north. Bulk cement is dispatched in both directions from Slurry, with weekly block loads directed to Gauteng.
** Note: The Radio Token system has is now used on this secondary line, as well as on other lines.*

3.1.12 Pretoria North – Rustenburg – Thabazimbi – Ellisras branch line

This is an important "branch line" serving coal, iron ore and chrome mines in the North West and Limpopo provinces. The line feeds large volumes of bulk traffic into and through Gauteng. As such, it is busier than many main lines in terms of actual tonnage carried.

The line was originally opened to Rustenburg in 1906 and extended to Thabazimbi in 1934, after it was decided to exploit significant iron ore deposits in conjunction with the establishment of the Pretoria Works of Iscor. The line was extended 112 km to Ellisras to exploit coal resources in 1980 as a "Guaranteed Line" in which Iscor undertook to guarantee the railway administration against operating losses. The 22 km section from Pretoria North to Tallardshoop (3 km east of De Wildt) falls within Gauteng itself.

At present, some 1,7 million tons of coal are transported from Ellisras to the various steel works at Pretoria, Vanderbijlpark, Newcastle (KZN) and Saldanha (WC). Iron ore traffic from Thabazimbi currently exceeds 2,5 million tons per annum and is destined to Vanderbijlpark and Newcastle. In addition, nearly one-million tons of chrome and ferrochrome are railed from the Rustenburg area, granite blocks for export from the Marikana area to Durban and Richards Bay, and motor cars from the Rosslyn industrial complex to Durban.

The Pretoria North – Ellisras line is 347 km in length. The section from Pretoria North to Rosslyn is electrified at 3 kV DC and this continues to De Wildt ; onwards to Thabazimbi, the line is 25 kV AC, while diesels operate beyond to Ellisras. A new line from Pyramid South was constructed to Wildebeeshoek (near De Wildt) to enable through running of AC trains to Pyramid South, from where they change over to DC operation to Sentrarand (or Pretoria North and southwards).

Train control on the Pyramid South to Ellisras section is by radio train order. On average, 12 trains operate in each direction every day between Pyramid South and Rustenburg. At least six trains run on to Thabazimbi and 3 to Ellisras. These are all long air-braked trains, usually 80 wagons long.

Gauteng main and secondary railway lines

Gauteng – Free State mainline at Vereeniging, with steelworks at right. *(Text reference: 3.1.7)*

Grain train standing at Nigel *(3.2.1)*

Grootvlei – Redan line, with Grootvlei Power station *(3.2.6)*

Bulk cement train passing Viljoensdrift *(3.1.7)*

3.2 Arterial Intra-provincial Connecting Lines

3.2.1 Springs – Kaydale

This line was opened in 1935 to serve the southern gold mines between Springs and Nigel. The mines have now closed but industrial development has taken place at the old mine locations. The line provides an alternative route for agricultural traffic from the eastern Freestate to the east Rand. In addition, the section from Springs to Nigel is utilised by Metro suburban trains.

3.2.2 Springs – Rooikop

This line, opened in 1955, was designed to create an alternative route for heavy coal traffic from the Witbank area to reach the heavy industries in the Vaal Triangle area and to bypass the busy Reef suburban area. It has been partly superseded by the

new Sentrarand bypass line to Skansdam, which uses a portion of the original route from Springs.

3.2.3 Hercules (Pretoria) – Meerhof – Magaliesburg

This line was originally constructed to serve the Magalies Valley but also to provide an alternative route for traffic between Pretoria, the old Western Transvaal (now North West Province) and Mafikeng. The line was closed to freight services in the early 1990's but saw limited tourist train operations for a time. Recent efforts are being made to reopen the entire line as a tourist operation.

3.2.4 Bank – Midway

Serving a number of gold mines, this line was opened in 1938 to provide an alternative route from the Cape to Gauteng and avoid the steep gradients of the original line from Potchefstroom to Randfontein. The important rail system of the Randfontein Estates Gold Mining Company connects with the Spoornet line at Suurbekom while the Libanon Gold mine connects at Westonaria.

3.2.5 Cachet – Houtheuwel

Originally opened in 1928 as an agricultural branch line, it ran from Cachet to Fochville. The line was upgraded, electrified and extended to Houtheuwel in 1966 to provide a better route for mineral traffic from the Northern Cape to Vanderbijlpark. As such, it has largely superseded the Bank to Midway section.

3.2.6 Redan – Grootvlei

A secondary link line, originally constructed to provide a route from the coal mines at Grootvlei to the Eskom Klip River Power Station at Redan, after the supply of coal at Redan itself became problematic. Envisaged first as a dedicated coal line, it was opened for public transport in 1951 and is 63 km in length, of which about 40 km falls within Gauteng. It connects with the Bethlehem – Balfour North agricultural line at Grootvlei and provides an outlet for two grain silos located at Bloekomspruit and Goeiehoek. *As part of the Spoornet line rationalism programme this line was closed as a through route after 2005 and most has now been uplifted.*

In later years, Eskom opened a new power station at Grootvlei itself and this was supplied with coal from the nearby Springfield Colliery. The line to Redan has been used mainly for local traffic since then.

3.3 Local lines: Branches, goods avoiding lines (i.e., to by-pass the busy commuter lines)

3.3.1 Pretoria West – Cor Delfos – Voortrekkerhoogte (Thaba Tswane)

This short branch was constructed to serve the Iscor Pretoria Works and the military base at Voortrekkerhoogte in 1921. In recent times it provided a rail outlet for a

dolomite mine via a sub-branch to Mooiplaats, while the section from Pretoria West to Cor Delfos forms part of the Metro suburban service to Saulsville, opened in 1958.

3.3.2 **Rayton – Cullinan – Zonderwater** (north of Pretoria – Witbank line)

A short branch line originally opened in 1905 to serve the Premier Diamond Mine at Cullinan. An iron ore mineral processing plant at Zonderwater provides the only freight traffic on this line at present.

3.3.3 **Forfar – Ekandustria** (north of Pretoria – Witbank line)

Constructed during the late 1970's as part of the former border-development programme, the line was envisaged as a feeder to the Ekandustria Industrial area (just inside Mpumalanga) and situated about 14 km north of Bronkhorstspruit. The project was promoted by the Bronkhorspruit municipality but the railway facilities are currently under-utilised.* There is a medium size yard at Forfar itself.
It is thought that this branch in not used at all.

3.3.4 **Refinery – Alberton** (south of Rand Mineral line)

This line was originally opened in 1911 to serve freight and passenger traffic requirements in the Alberton area and is currently used by Metro suburban trains while, there is no regular freight traffic.* *The branch has been closed and the suburban service terminated.*

3.3.5 **Sentrarand and other freight avoiding lines**

These lines were constructed as part of the Sentrarand yard development project in the late 1970's and early 1980's. Starting in the north, a line runs from Ga-Rankuwa to Pyramid South and Sentrarand, providing access for the Ellisras branch, the Beit Bridge line and the Witbank to Pretoria section.

Another line runs from Oakmore on the Germiston – Pretoria line to Sentrarand, while a connecting line runs to Welgedag for traffic from the Witbank coalfields. Another line runs past Springs to Glenroy on the Union – Durban main line, and continues to a junction on the Germiston – Vereeinging line at Skansdam.

There is, in addition, a line running from Springs to near Rooikop on the Union Durban main line. This was constructed before the Sentrarand project to provide for the movement of southbound coal traffic. This is described in the section on the Midway – Bank and the Cachet – Houtheuwel freight lines.

4. INDUSTRIAL AREAS, MAJOR RAIL USERS AND STATION FACILITIES

(These are listed alphabetically in this section but also by line).

There are over 1 000 private siding owners in Gauteng and in cases where they are located in an established industrial area, access to the nearest Spoornet line is usually via industrial lines owned and maintained by the local municipalities. With the decline in the rail share of the general freight market, many sidings and access lines are either underutilised or disused. Considering increasing road congestion it may be advantageous to reconsider the use of some of these sidings in the future. The following information is the latest update of the status of rail in the identified industrial areas. It is followed by a section detailing private sidings that are linked directly to Spoornet lines at stations and halts in Gauteng.

4.1 Major Industrial Areas

4.1.1 Alrode

This industrial area within the Alberton municipal area, lies east of the R59 highway to Vereeniging and is served from Natalspruit station yard on the Germiston – Vereeniging line. There are over 10 route kilometres of access rail lines in the 1 200 hectare industrial township, consisting of some 14 dead-end branches. Current rail users include a major soda ash distribution company at Natalspruit station (about 200 000 tons per annum), a brewery and a malt factory (70 000 tons of barley per annum). There are many other private siding owners who are not currently using rail transport.

4.1.2 Anderbolt

In the Boksburg municipal area north of the R29 Main Reef Road and served from west end of Dunswart yard. There is a single 3 km line in the 600 hectare industrial township area which served a large telephone pole storage and distribution yard in the past. This telephone company was the most important rail user in area but now relies on road transport for direct deliveries rather than stockpiling in at a large central depot.

4.1.3 Apex

East of Benoni and south of the R45 Main Reef Road, covering an area of about 300 hectares and served from the east end of Apex station yard. There is a single 2 km line running through the southern portion of the estate although there are no current rail users. Most rail lines are intact but the access line has been cut at Apex station where there is a small yard.

Industrial Areas

Natalspruit yard with soda ash wagons for Alrode distributor *(Text ref: 4.1.1)*

Soda ash being offloaded at distribution point in Alrode *(4.1.1)*

Alrode industrial area railway lines Being uplifted *(4.1.1)*

Iron and steel plant at Boksburg *(4.1.6)*

General view of access line and road at Boksburg East. *(4.1.6)*

View of disused private siding at parallel Boksburg East. *(4.1.6)*

4.1.4 Aureus

In Randfontein municipal area, comprising an area of about 200 hectares and bordered on the east by the R28 Main Reef Road and served from Randfontein station. A single rail line about 2 km in length runs into the industrial area from south of Randfontein station. The line is intact but is not currently in use.

4.1.5 Benoni South

In Benoni municipal area, south of the town itself. An old industrial area of about 200 hectares and originally served from the Benoni station yard. Many of the industries which were established in the area have now either moved or are no longer operating and the Benoni yard track is now being removed. Many of the remaining industrial rail lines have been uplifted as well.

4.1.6 Boksburg East

In Boksburg municipal area. Access to the southern section (south of Commissioner Street) is from south of the Dunswart station yard along the Rangeview line, running via the Nestadt industrial area. Access to the northern section is from the west end of Dunswart station on the main Germiston to Benoni route. The line runs via Nestadt and is about 4 km in length. There are several private sidings along the line and it serves a pressed board factory which received wood chips and roundwood by rail in the past.

The lines north of Commissioner Street are about 2 km in length. They serve a large engineering works having a locomotive and wagon construction division, as well as a large food processing plant. There are many under-utilised private sidings in the 500 hectare industrial area.

4.1.7 City Deep *(Described in detail in Chapter 6 Intermodal section)*

An industrial area south of the Johannesburg CBD and adjacent to the Heidelberg Road. Site of the Fresh Produce Market and Municipal Abattoir, neither which currently use rail transport. The City Deep Inland Port Container Terminal is situated in the area and is supported by several privately owned satellite depots. A terminal such as City Deep is designated as an “inland port” as it has customs clearing facilities, which City Deep has. Containers can travel “in bond” to City Deep, where the cargo will be cleared for importation into the country.

4.1.8 Chamdor

This is relatively new industrial estate located southeast of Krugersdorp and bordered by the R 558 on the east. Access is from Krugersdorp station by way of a 5 km industrial spur. Within the industrial area itself which covers an area of about 500 hectares there are an additional 8 kms of lines serving various private sidings. These include a flour mill which receives about 120 000 tons of wheat per annum, a brewery which receives 12 000 tons – 15 000 tons of malted barley per annum and a liquid fuel depot.

The connecting line from Krugersdorp station has been closed and largely uplifted and all private sidings are out of use

4.1.9 Chloorkop

In Kempton Park municipal area, alongside the R39 Zuurfontein road. Access is from Isando yard by way of the Modderfontein exchange yard and a 3 km private line. A large chemical factory at Chloorkop brought in about 120 000 – 150 000 tons of industrial salt per annum in the past by rail from Durban. This salt was transported by ship from Walvis Bay via Durban, but now transported by road from Richards Bay. The rail facilities are still intact and could be used again in the future.

4.1.10 Clayville

In Olifantsfontein municipal area, west of route 18 and north of the R562 Olifantsfontein Road. Access to the 300 hectare industrial area is from the south end of Olifantsfontein station yard which loops back via a 3 km line linking the large refractory brick and porcelain tile factories. Rail is not currently used but most lines are intact. The refractory brick works currently imports about 20 000 tons of magnetite rock from China per annum which is landed at Durban but taken by road to Clayville. In addition, some 150 000 tons to 175 000 tons of dolomite rock is brought by road from a quarry in the Pretoria area. This traffic could be brought to rail in the future.

4.1.11 Duncanville

An old industrial area comprising an area of about 400 hectares in the northern part of the Vereeniging municipal area east of the R82. Many or the heavy industry establishments have closed or relocated and some of the railway industrial lines have been uplifted.

4.1.12 Ekandustria Industrial area

A former industrial decentralisation development project, it is served by a 12 km industrial line running from Forfar station to a point 12 km north of Bronkhorstspuit on provincial route R513. A number of industries were developed in the area although only one, an explosives factory currently uses rail. This company imports some raw materials which are transported to the factory in containers by rail, while a small quantity of explosives are exported by rail to neighbouring countries.

4.1.13 Factoria

North of Luipaardsvlei Station, this old industrial area is now without rail activity although most of the lines are still intact.

Industrial Areas

Private train on line to Chloorkop. *(Text reference: 4.1.9)*

Access line overgrown and disused at Factoria, Luipaardsvlei. *(4.1.13)*

Disused private siding at Factoria *(4.1.13)*

General view of access line from Spoornet at Germiston South *(4.1.14)*

Food processing mill at Germiston South *(4.1.14)*

Bulk sugar facility with sugar wagons from KwaZulu Natal *(4.1.14)*

4.1.14 Germiston Industries South

In the southern part of the Germiston municipal area and south of route R 46 to Boksburg and Benoni. There are about 4 km of industrial lines serving an area of about 300 hectares and giving access to several private siding operators. The rail connection is from the Germiston station yard.

Current rail users include a large grain mill which receives about 200 000 tons of bulk maize per annum, a sugar distribution operation which receives 80 000 tons of bulk sugar p.a. from KwaZulu Natal, an animal feed company which receives molasses and a scrap metal company. A line in the southern section of the township connects with the South East industrial area but it is not currently used since a new more direct connection to the area has been made near Kutalo station.

4.1.15 Germiston Industries South East

In Germiston municipal area, east of the Germiston – Vereeniging main line. Served from near Kutalo station by a spur from the main line between Elsburg and Germiston. A major steel product distribution company receives 50 000 tons to 60 000 tons of steel from producers but local distribution is by road.

4.1.16 Germiston Industries West (including Driehoek)

An old industrial area directly west of the Germiston town centre and north of metro route 46 (Power Street.) It encompasses an area of about 500 hectares and has two rail access lines, 3 km in length, running from India junction in the section south of Refinery Metro station. There are several private siding owners, although none currently use rail on a regular basis.

4.1.17 Industria

An old established industrial area of about 300 hectares located in the Johannesburg municipal area, west of the city centre and north of the R41 Main Reef Road. There are about 3 km of lines served from Langlaagte yard. Current rail users include a large yeast producer who receives about 40 000 tons of molasses by rail per annum. This is currently sourced from Komatipoort in Mpumalanga and Swaziland. Road transport is also used for about 25 000 tons p.a. from Pongola.

Other rail users include a liquid fuel depot which is currently planning to upgrade its rail infrastructure and a scrap yard. Numerous private siding owners currently do not use rail but the access lines are largely intact.

4.1.18 Isando

In the Kempton Park municipal area and served from the Elandsfontein/Isando yard. This is a large and relatively modern industrial area, covering some 1000

Industrial Areas

Disused rail line along Power Road, *(Text reference: 4.1.16)*

Yeast factory in Industria area, west of Johannesburg *(4.1.17)*

Private siding serving liquid fuel depot In Isando Industrial area *(4.1.18)*

View of industrial access line in Isando *(4.1.18)*

Kelvin Power Station and block loads of Coal *(4.1.19)*

Chemical factory exchange yards at Modderfonetin. Many now uplifted *(4.1.19)*

hectares. There are about 9 km of access lines, consisting of 7 dead-end branch sections, serving various private siding owners.

Current rail users include a large steel merchant which brings in about 10 000 – 12 000 tons per annum by rail (30% of requirements), a coal distribution company which brings in between 60 000 and 75 000 tons of coal and anthracite per annum (less than 10% on rail) and a liquid fuel depot. Other food processing companies receive grain and sunflower seed and there is a large grain silo in the area. There are many private siding owners who are not presently using rail for a variety of reasons, as with other industrial areas.

4.1.19 Modderfontein and Kelvin

Served from Isando railway yard by a 7 km connecting line. A large thermal power station which supplements power from the national grid is situated at Kelvin. Formerly owned by the Johannesburg Municipality, it has now been privatised. Coal is normally received in 45 wagon block loads from the Witbank area and the volume is determined by demand which is higher in winter than summer. On average, about 800 000 tons is transported to the power station annually.

The Modderfontein facility was originally developed to produce dynamite for the mines but later began chemical production on a large scale. Since the explosives section has been transferred to Sasolburg, the plant now produces chemicals such as sulphuric acid and ammonium nitrate, much of which is destined to neighbouring countries to the north. Specialised chemicals are also received by rail from Sasolburg. Rail traffic in general is greatly reduced compared to the past.

4.1.20 Nestadt

A narrow industrial strip on east side of Metro route 43, Van Dyk Road, between Boksburg and Benoni. It is included in Boksburg East Industrial area in this review.

4.1.21 New Era

In Springs municipal area, north of New Era station and the R51. It encompasses an area of about 300 hectares and is serviced by a 2 km industrial spur from Springs yard. The internal rail system is about 3 km in length and there are several private siding owners. Only one company, a large industrial glass manufacturer, presently uses rail for reception of dolomite, calcite, silica sand and broken glass.

4.1.22 Nuffield

In Springs municipal area, east of the R51 and served from Daggafontein station. It covers an area of about 300 hectares and there are some 6 kilometres of rail

Industrial Areas

Nuffield (Springs) disused railway lines. *(Text reference: 4.1.22)*

Iron and steel works at Powerville, Vereeniging. *(4.1.23)*

Iron and steel works railway lines, Powerville, Vereeniging *(4.1.23)*

Private Industrial lines at Duncanville, Vereeniging *(4.1.11)*

Metrorail station and industrial line at Duncanville, Vereeniging *(4.1.11)*

Disused private siding to fuel depot in Pretoria Industrial area *(4.1.25)*

consisting of 5 branches serving various private siding owners. There are no current rail users but most lines remain intact.

4.1.23 Powerville

In the Vereeniging municipal area, south of downtown area. It is reached via a 3 km line running past the old Union Steel Works. A refractory works, lime distributor and the regional water board have private sidings within the 300 hectare area which in on both sides of the R42 which runs to Vanderbijlpark and the south. The lime distributor receives about 250 000 tons of lime from the Northern Cape which is transported in 40 wagon block loads. In addition, the water board receives two block loads of coal from the Witbank area per week and this amounts to about 200 000 tons per annum.

4.1.24 Pretoriusstad

In Nigel municipal area, located on the west side of Nigel station. It is about 200 hectares in area and a single 2 km line serves the southwest section. There are no current rail users but lines are largely intact.

4.1.25 Pretoria Industrial

Situated to the north and west of the large steel works, it is served by lines from the Cor Delfos and Electro Metro stations. It covers an area of about 300 hectares and there are about 7 kilometres of access lines serving private siding owners. Some lines have been uplifted but there are rail operations to an animal feed mill, a liquid fuel depot and the Pretoria West Power station which is operated when electricity demands require.

The animal feed mill receives about 45 000 tons to 50 000 tons of maize per annum and dispatches about 7 500 tons of sunflower oil cake per annum to a Boksburg food processing plant. The power station receives up to two 40 wagon block loads of coal per week from the Witbank area during the winter but often none in summer. This can amount to between 150 000 tons and 200 000 tons per annum.

4.1.26 Pretoria West

In Pretoria municipal area, served from yard at Pretoria West. There is a large mill which receives about 150 000 tons of wheat and 50 000 tons of maize from various sources per annum. This is about 50% of their requirements and road transport is used for the balance. Rail in the past accounted for over 80% of inbound traffic. A second mill, formerly owned by a large milling group, has moved to the Waltloo industrial area. A new tenant is considering re-opening the facility which is served by two private sidings.

4.1.27 Roodekop

East of Alberton and the Alrode industrial area. This 300 hectare industrial township is adjacent to Rooikop station where there is a medium sized railway yard for traffic. It is bounded in the south west by the R 103 (Heidelberg Road). There are about 3 km of rail access lines serving private siding owners in the area. A large steel

merchant is the present major rail user, receiving between 150 000 and 200 000 tons per annum of structural and other products from Vanderbijlpark and Clewer (Mpumalanga). There are also a number of smaller companies using rail and while a considerable portion of the rail system is not being used, it is still intact.

4.1.28 Rosslyn Industrial

Situated west of Pretoria North and south of Soshanguve, this is a modern industrial complex covering an area of about 1 200 hectares. A busy industrial area, with rail providing services to two large motor vehicle assembly plants, a brewery and a new container depot.

Rail access is from Rosslyn station on the southern border of the area and there is a medium size yard to accommodate traffic. The R 566 runs through the area, linking with the N1 in the east and to Rustenburg and beyond in the west. There are about 12 km of rail lines within the area and they serve a number of private siding owners.

One car assembly plant receives containerised traffic consisting of imported motor vehicle components, while the other utilises the motor vehicle trains running from Durban and Port Elizabeth. The brewery receives malted barley and dispatches over 200 000 tons of beer in block train loads to the Free State, Mpumalanga, Limpopo and the North West Province. A major international shipping and forwarding company has established a container depot to serve a major client in the motor vehicle assembly and manufacturing sector. Rosslyn has received the highest accolades as the best railway operation in terms of customer service and productivity.

4.1.29 Sasol Industrial Complex (In Free State but part of Gauteng Industrial Area)

Covering an area of over 800 hectares. and situated directly east of Sasolburg. It is served from the large yard at Sasolburg station and there are over 12 km of internal access lines comprising 9 branches to various private siding owners.

The Sasolburg complex was originally developed for the large synfuels plant but it has diversified and expanded into specialist chemical and fertiliser production from by-products to the process. There are at least eight major industries that are situated in the complex and there are numerous private sidings.

Petrol and diesel production is a major source of rail traffic while various liquid chemicals are rail to a wide variety of countrywide and international destinations.

Industrial Areas

Rail lines under cover in old, currently disused, mill in Pretoria.
(Text reference: 4.1.22)

Wagons loaded with steel, awaiting placement to steel merchant at Roodekop Industrial Park. *(4.1.27)*

Rosslyn station and yard. *(4.1.28)*

Rosslyn beer train. (4.1.28)

General view of industrial access line in

Rosslyn, offloading cars from Durban.

Rosslyn, north of Pretoria. *(4.1.28)* *(4.1.28)*

Industrial Areas

Rosslyn private container depot. *(4.1.28)*

Sasolburg railway yard. *(4.1.29)*

Train in Sasolburg industrial area. *(4.1.29)*

Train with fuel and chemical tank wagons In industrial Sasolburg area. *(4.1.29)*

Concrete sleeper plant in Vulkania Industrial area, Brakpan. *(4.1.32)*

Bulk cement facility private siding, Vulkania, Brakpan. *(4.1.32)*

A large volume of containerised traffic consisting of polymers, waxes and explosives are produced and taken by road to the Vaalcon Container Terminal at nearby Viljoensdrift.

During 2003-2009, over 367 000 tons of various liquids, special chemicals, gases and granular products were received by industries in the complex, while over one-million tons of liquid fuel, fertilisers, and various chemicals were dispatched to various parts of South Africa and countries to the north.

4.1.30 Vorsterkroon

Located 2 km northwest of Nigel and served by a 5 km line from Dunnottar Station. There are about 7 kilometres of access lines in the area and five branches serve the various private siding owners. The industrial township is adjacent to the R42, running from Nigel to Delmas.

There is only one current rail user, a maize mill that receives bulk grain. A major rail locomotive and wagon manufacturer is situated in the area and uses the line to Dunnottar to deliver new or reconditioned equipment to the railways, apart from certain components such as wheels and bogies.

4.1.31 Vulcania

South east of Brakpan town centre and served by a 1 km Spoornet line from Brakpan station yard. It is about 300 hectares in extent and a 5 kilometre single line provides access for private siding owners in the area. There are two companies currently using rail. This includes a concrete sleeper factory and a major cement company which receives 500 000 tons of raw cement from its production plant in the Lichtenburg area. Final blending and packaging takes place at the Vulcania facility. There are a number of the private siding owners who are not currently using rail but the railway lines are still intact.

4.1.32 Vulcania South

Located south of N17 in Brakpan municipal area and bounded by Ergo and Vlakfontein roads. Two rail users are located in the area. The first is a gold recovery company which is processing neighbouring mine dumps and dispatches sulphuric acid to various users in the province and beyond. The second operation is a very large gypsum board manufacturer which receives between 120 000 tons and 165 000 tons of gypsum rock in block loads from a mine in the Northern Cape.

The area is on the site of an former gold mine which had a connection by way of a line into Springs station itself. This has now been uplifted and a new 3 km line constructed in 1998 connects with the Springs – Skansdam section of the Sentrarand freight bypass line at a point south of Brakpan.

Industrial Areas

Aerial view of Wadeville industrial area, showing integrated rail and road facilities. *(Text reference: 4.1.33)*

Largely disused holding yard at entrance to Wadeville industrial area. *(4.1.33)*

Waltloo yard, Pretoria. *(4.1.34)*

Spoornet Class 36 shunting locos at Waltloo yard, Pretoria. *(4.1.34)*

Multi-track yard at Waltloo fuel depot. *(4.1.34)*

View of tidy private siding and access lines in Waltloo industrial area. *(4.1.34)*

Industrial Areas

Waltloo Mill. Rail deliveries reduce road congestion in area. *(Text reference: 4.1.34)*

Internal rail yard serving Waltloo mills. *(4.1.34)*

Private loco shunting in Waltloo maize Mill. *(4.1.34)*

Railway yard at Cor Delfos, serving adjacent steel works. *(4.2.4)*

4.1.33 Wadeville

A large established industrial township of about 800 hectares located south of the Germiston municipal area and bordered in the north by the N17.

Rail access is from between Wattles and Union on the main line from Germiston to the south. There are about 14 kilometres of lines in the industrial area, comprising 7 dead-end lines, serving various private siding owners.

Rail traffic in the area has declined dramatically and at present only a few companies regularly use rail transport. These include a large steel stockist, a wine distiller and a tool company which receives steel from Vanderbijlpark. Nevertheless, most rail lines are intact.

4.1.34 Waltloo

A comparatively new industrial area in eastern Pretoria and bounded in the north by the M8 to Mamelodi. It encompasses an area of about 400 hectares and is served by a line from Waltloo Metro station. A medium size yard serves as a staging point for received and dispatched traffic.

There are about 5 km of service or access lines serving various private siding owners. These include a large mill which receives about 180 000 tons of maize, a brewery which receives malted barley, and an important petroleum depot which dispatches large volumes of liquid fuels in countries to the north.

4.2 Other Railway stations or halts for major clients

(Listed alphabetically by official station or halt name.)

The places listed below serve individual companies that have private sidings but are not associated with developed industrial townships.

It is important to appreciate the fact that in official railway terminology, a station is a manned facility serving both passenger and freight services. Many former stations have been downgraded to mere passing loops or halts which have no passing loops. The places listed below are identified in terms of their current status. A passing loop is generally regarded as a halt, although a halt may not have a passing loop.

Stations serving commuter services are identified as being Metro Stations.

4.2.1 Battery Passing loop (Krugersdorp – Mafikeng line)

The location of a grain silo which receives local maize from farming activities and forwards it by rail or road.

4.2.2 Bon Accord Metro Station (Pretoria North – Pyramid South section of Polokwane line)

A grain mill located at the former co-op silo receives up to 50 000 tons of grain by rail from various sources per annum. 90% is maize and the balance is wheat. At present, 60% of the total input is on rail.

4.2.3 Carltonville Station (Potchefstroom – Bank – Randfontein section)

A major gold mining company which operates a 20 km electrified railway system connects with the main line at a point east of Carltonville. There is a second and smaller mine which has a rail link via the larger mine. Rail transport has been used in the past to receive mine prop timber, explosives and general freight but this traffic has diminished in recent years.

The mine hauls large quantities of gold reef ore from the various mine shafts to reduction plants and operates 11 large electric locomotives as well as three diesel locomotives.

4.2.4 Cor Delfos Metro Station (see also: Pretoria Industrial)

A large local steelworks operates an internal railway system having over 12 kilometres of line as well as considerable yard track. The mill operated over 20 locomotives until recently but there has been a significant reduction in production activity. A private railway supply company has now taken over locomotive maintenance and train operations.

4.2.5 Dunnottar Metro Station (Springs – Kaydale line)
Eastcon Container Terminal *(Described in Chapter 6)*

This Spoornet satellite container terminal serves the Brakpan, Nigel and Springs area. It is operated in conjunction with the City Deep terminal.

4.2.6 Dunswart Metro Station (Germiston – Benoni section)

A small Iron works which produces sponge iron is served by sidings on the north side of the Germiston – Benoni – Springs line east of Dunswart station. Iron ore and coal is brought in by rail. The iron works operates its own locomotive for use on the internal rail system.

4.2.7 Forfar Passing Loop and halt (Pretoria – Witbank line)

A branch runs to the Ekandustria Industrial area, north of Bronkhorspruit. **(See industrial section)**

Railway stations and interloops

Railway wagons and stockpiled pulpwood at Geduld pulp mill.
(Text reference: 4.2.8, 3.1.5)

Line to platinum refinery, Geduld
(4.2.8, 3.1.5)

Jupiter cement works with N3 in foreground. *(4.2.13, 3.1.8)*

"Pepper-Pot" bulk cement wagons at Jupiter holding yard. *(4.2.13)*

Private loco loading wagons of dolomite at Glen Douglas. *(4.2.11, 3.1.7)*

4.2.8 **Geduld Metro Station** (Dunswart – Welgedag section)

A long-established paper and pulp mill is located to the south-east of Geduld station. In addition, a 3 km line runs southwards to a platinum refinery situated adjacent to a former gold mine.

The paper mill receives about 175 000 tons to 200 000 tons of pulpwood from eastern Mpumalanga per annum. A significant additional volume of pulpwood is handled by road transport. In addition, 300 000 tons of coal is received by rail from the Witbank area and about 50 000 tons of lime from Port Shepstone. This mill operates its own locomotives for internal shunting. The entire output is transported by road to various users.

4.2.9 **Goeiehoek Passing Loop and Halt** (on Redan – Grootvlei line)

A typical grain silo receives local maize from farming activities and forwards it by rail or road.

4.2.10 Hammanskraal Metro Station (Pretoria North – Pienaars River On the Polokwane line)

A small grain mill is located next to the station area. Between 15 000 tons and 20 000 tons p.a. is received by rail from various points. This is about 90% of the total grain received at the mill.

4.2.11 Henley on Klip Metro Station (on Germiston – Vereeniging section)

A large dolomite quarry is located between Daleside in the north and Henley on-Klip. The entire production is normally transported by rail. About 400 000 tons per annum is sent to Vanderbijlpark and 400 000 tons to Newcastle (KZN).

4.2.12 Hercules Metro Station (on Pretoria – Pretoria North section)

There is a large cement production plant which receives clinker-limestone from the Beestekraal Quarry at Atlanta. This is received in 50 wagon block loads twice a week. The annual tonnage is about 250 000 tons. The outputs from production in the form of bulk and bagged cement is delivered by road.

4.2.13 Jupiter Metro Station (on New Canada – India Junction section)

A large cement works currently receives raw bulk cement from Slurry in the North West Province. This product is blended and bagged for distribution by road to various users. There is also a major steel rope manufacturer located adjacent to Jupiter station and while it has a private siding, rail is not currently used. Another private siding serves the national electric power supplier but there is little current rail traffic.

4.2.14 Kaalfontein Metro Station (on Germiston – Kempton Park – Pretoria section)

This is a busy rail centre. A major cement producer receives bulk and bagged cement from its mill in the North West Province. The bagged cement is palletised and shrink-wrapped. Road is used for final delivery from the facility. There is also a large silo which receives grain by road from the local area and distributes by rail when convenient.

There is a major motor vehicle train loading and off-loading distribution point north of Kaalfontein station. A number of distribution companies use this facility for imported and domestically produced light motor vehicles. About five to six motor vehicle trains operate between Durban and Gauteng each week and three run from Port Elizabeth and one from Cape Town.

4.2.15 Kliprivier Metro Station (on Germiston – Vereeniging section)

A large fibre-cement manufacturing company receives cement by rail. It is received in 40 wagon block loads from near Lichtenburg running via Natalspruit every 7 to 10

days. This totals about 50 000 tons per annum. Delivery of manufactured products is entirely by road.

There is a new grain mill situated near Kliprivier on the Springs – Skansdam freight by-pass line. Services to this mill are provided from Natalspruit by a hauler service. A moderate volume of grain is brought in by rail while germ and edible oil is dispatched.

4.2.16 Leeuhof Metro Station (on Vereeniging – Houtheuwel section)

A large grain mill adjacent to the Leeuhof Metro station rails in some 50 000 tons of maize per annum. Milled product is distributed locally by road.

4.2.17 Littleton Metro Station (Centurion, on Germiston – Pretoria section)

A large dolomite quarry is located adjacent to the railway line and about 300 000 tons is railed annually to a large steel mill at Clewer (in Mpumalanga) in 30 wagon block loads carrying about 1 560 tons per train.

4.2.18 Meyerton Metro Station (on Germiston – Vereeniging section)

A very large manganese-alloy smelting works receives a significant volume of traffic by rail. This includes over 1 million tons of manganese ore from the Northern Cape, 250 000 tons of chrome ore from the North West Province, 240 000 tons of coal from the Witbank area and over 100 000 tons of anthracite imported via Richards Bay. This company has a sizable internal rail system, the operation of which has been outsourced to a Gauteng-based rail service operator. Manganese rock is exported in bulk wagon train-load consignments or in 6 metre containers which are taken by road to the Vaalcon Container Terminal at Viljoensdrift.

Railway stations and interloops

Wagons of bulk and palletised-bagged cement at large Kaalfontein distribution point. *(Text reference: 4.2.14, 3.1.1)*

Mill and railway lines at Leeuhof, Vereeniging *(4.2.16, 3.1.9)*

Loading wagons of dolomite at Littleton as passenger train passes. *(4.2.17, 3.1.1)*

Private locomotive at Meyerton manganese smelter. *(4.2.18, 3.1.7)*

Clinker train at Roodepoort, being shunted to private siding by Spoornet.

Gold-reef ore train on private railway in Randfontein area. *(4.2.23, 3.2.4)*

In addition, a large mill receives about 60 000 tons of maize per annum by rail but a significant additional volume is received by road.

4.2.19 New Canada Metro Station (on Langlaagte – Midway – Vereeniging section)

A rail maintenance service provider to the railways has access on the north side of New Canada station. This provides access for its equipment, some of which travels over the main lines to contract areas.

4.2.20 Pyramid Metro Station (on Pretoria North – Polokwane line)

A municipal power station receives coal from the Witbank area. Trains are operated over DC electrified sections to Pyramid South with Class 38 Electro-diesel locos, usually three on a 40 – 50 wagon block load.

4.2.21 Randwater Metro Station (on Germiston – Vereeniging section)

The Zwartkoppies Pumping Station of Rand Water is connected to Spoornet via a 5 km private line. The steam-powered pumping station is part of the pipeline system running from the Vaal Dam to the Johannesburg area. Coal is brought to Randwater station by Spoornet in 1 400 ton block loads up to twice a week and the annual intake is about 115 000 tons. *Note: this operation ceased and the line has been uplifted.*

4.2.22 Roodepoort Metro Station (on Johannesburg – Krugersdorp section)

A 3 km industrial spur line runs south of Roodepoort station and links with a large cement production plant via a line originally built to service a now-closed gold mine. The cement producer receives block loads of clinker from the North West Province.

4.2.23 Robinson Metro Station (Krugersdorp – Randfontein section)

A large grain mill receives 500 000 tons to 600 000 tons of maize by rail per annum. This is delivered in 40 or 50 wagon block loads, depending on whether the origin is domestic or imported. There is, in addition, an oil mill which has a private siding.

4.2.24 Suurbekom Passing loop and halt (on Midway – Bank section)

A large gold mining company rail system connects with the mainline at Suurbekom. This operation has over 20 kilometres of track running north to near Robinson on the Randfontein – Krugersdorp section. Trains operate over the system, hauling gold reef ore from the mines to a large reduction plant east of Randfontein. Train operations, locomotive and wagon maintenance is handled by a Port Elizabeth based railway service provider.

Mine prop timber, explosives and general stores, previous transported by rail are now largely hauled by road.

Railway stations and interloops

Cluster of grain silos at Randfontein. *(Text reference: 3.1.10)*

Large grain mill and silos at Robinson station, Randfontein. *(4.2.22)*

Zinc smelting works at Struisbult, south of Springs. *(4.2.24, 3.2.1)*

Steel plant at Union Junction, with private locomotives and block load of coal *(3.1.7)*

Steel facility receiving yard at Bijlkor, Vanderbijlpark. *(4.2.27)*

4.2.25 **Struisbult Metro Station** (on Springs – Kaydale line)

A major zinc smelter and chemical producer operates on the site of an old gold mine, a kilometre from the station where a holding yard is located. Some 70 000 tons of zinc concentrate is railed from Namibia, while over 100 000 tons is railed from the Northern Cape and processed at the plant. A by-product is sulphuric acid, the majority of which is sent by road to various destinations in Gauteng. About 7 000 tons is sent by rail to Newcastle in KZN. Zinc metal is a major production commodity and over 100 000 tons is produced, of which about 15 000 tons is sent by rail for export in containers which are sent by road to the Eastcon Container Terminal, from where they are railed via City Deep to the coast. *Note: this operation has since ceased and the zinc concentrate is exported via Luderitz.*

4.2.26 **Tarlton Passing Loop and halt** (on Krugersdorp – Mafikeng line)

The location of an important liquid fuel depot. Liquids are received by pipeline from Coalbrook (near Sasolburg) and are transferred to rail, mainly for transport to countries to the north. The road off-take point serves the northern areas.

4.2.27 **Union Junction and Halt**

A large steelworks and foundry which manufactures railway castings such as wheels, bogies and a variety of other general industrial products is situated in an area to the southwest of Wadeville known as Junction Hill. This company operates an internal rail system with its own locomotives.

Raw materials railed each year to the plant include about 630 000 tons of iron ore from the Northern Cape, 350 000 tons of coal from the Witbank area, 23 000 tons of lime and 45 000 tons of dolomite rock from the Northern Cape, and scrap steel from various sources. The company uses road transport for most finished products, although wheel-sets for the railways are usually railed, as are export steel orders which are highly variable in volume but not highly significant as a percentage of total production.

4.2.28 **Vanderbijlpark**

South Africa's largest steelworks and situated at the end of an electrified spur line from Houtkop on the Houtheuwel – Leeuhof section of the New Canada – Vereeniging line and north of the town itself. The steelworks and associated industrial area is over 2 500 Ha. in extent and the steelworks internal railway system comprises over 75 kilometres of track.

The railway has a large yard known as "Bijlkor" feeding the steelworks receiving/dispatching yard. Over 1.8 million tons of iron ore is received by rail from the North Western Province and 3.7 million tons from the Northern Cape per annum. 600 000 tons of coal is railed from the North West Province, 380 000 tons from northern Limpopo, about 230 000 tons from the Witbank area. In addition, over 1-million tons of coking coal from Australia is imported via Richards Bay, and 50 000 tons of anthracite is railed from northern KwaZulu Natal.

4.2.29 Viljoensndrift Station Vaalcon Container Depot *(Described in Chapter 6)*

4.2.30 Westonaria Station (on Midway – Bank Section)

Two gold mines connected with the main line system here in the past. One has closed but the other one remains in operation at the present time. Gold Reef ore trains operate on the remaining system and a small amount of interchange traffic continues with railways.

4.2.31 Zonderwater Halt (at end of Rayton – Cullinan branch)

A private company processes ore from Roossenekal to produce sponge iron for a major steel producer in Vanderbijlpark. About 65 000 tons of ore is railed in to the plant each year from Roossenekal in Mpumulanga and 28 000 tons of coal from the Delmas area is used in the drying process. The sponge iron output is approximately 40 000 tons, all which is railed to end users.

4.3 Summary – Station And Siding Facilities:

Railway station and siding facilities are clearly extensive in Gauteng, but many have been allowed to deteriorate and fall into disrepair. Due to the inaccessibility in many instances of Spoornet land and facilities to private sector operators, the private sector has developed logistic networks to the exclusion of these railway facilities.

As part of its functionality in terms of the NLTTA, GDPTRW needs to take a holistic view of all freight transport facilities in Gauteng, and establish their value within the context of an overall “Freight Plan” for the province. Considering the established freight transport corridors of Gauteng, a short, medium and long term utilisation plan for railway stations, sidings and facilities should be developed jointly by GDPTRW and Spoornet.

5. SIGNIFICANCE OF RAIL FREIGHT

5.1 Rail Freight Data

Gauteng may be the smallest province in land area in South Africa but it is the industrial powerhouse of the country. Within Gauteng, the city of Johannesburg is almost unique, not being situated on a major river and being located nearly 580 km inland from the nearest port of Durban, while the distance to Maputo at 599 km is marginally greater.

Because of its geographic location and industrial development, Gauteng is the business and financial hub of South Africa. It is not surprising, therefore, that most important rail and road routes meet within the province and that freight traffic on the

important corridors to the coast and to points north, east and west is routed through Gauteng. Because of the commercial activity within Gauteng, there is a high volume of generated and received inter-provincial freight traffic, as well as traffic generated and received within the province itself. Equally important is the high volume of transit traffic, of which a significant portion is international.

Spoornet figures for the financial year 2003 / 2004 (April – March) are as follows:

Forwarded	7 085 578	(Domestic and export)
Received	21 789 615	(Domestic and import)
Intra-provincial	1 190 763	(Generated and received within Gauteng)
Transit	17 995 607	(Using Gauteng as a bridge route)
TOTAL	48 061 563	

Forwarded traffic generated in Gauteng included over 2.9 million tons directed to Durban, of which nearly 1.5-million tons consisted of container traffic, while about 750 000 tons was iron or steel, 280 000 tons was ferro-manganese silicon and 101 000 tons fluorspar. The balance consisted of chemicals, motor vehicles, cement clinker and many other commodities. In addition, over 371 000 tons of traffic was directed to the Newcastle area. Here the main commodities consisted of dolomite, coke and silica. Traffic to Richards Bay totalled over 100 000 tons, of which nearly 38 000 tons was ferro-manganese silicon, 36 400 tons steel, and 15 600 tons of unslaked lime.

Received traffic from other provinces or imported cargo totalled 21 789 615 tons. Of this, approximately 1.4 million tons originated at Durban, 1.2 million tons at Richards Bay, over 400 000 tons came from Newcastle and about 67 000 tons came from Pietermaritzburg. The main traffic along these routes included in excess of 900 000 tons in containers, over 1.1 million tons of coal from Richards Bay (mainly special coking coal for steelmaking), about 389 000 tons of aviation turbine fuel from Durban, 185 000 tons of steel from Newcastle, and various other imported and domestic commodities. But import-export traffic was only part of the total traffic.

Of particular significance was the sheer volume of iron ore and manganese traffic originating in Limpopo and the Northern Cape, all destined to various steelworks in Gauteng. From the Northern Cape, running via Kimberley, nearly 3.7 million tons of iron ore and almost 1.0 million tons of manganese ores were consigned to users in Gauteng. A further 1.9 million tons of iron ore was routed into Gauteng from Limpopo.

Another very important commodity is coal. During 2003 / 2004 some 1.2 million tons reached Gauteng from the Ellisras area of Limpopo, while some 435 000 tons originated in the Musina area. In addition, over 3.5 million tons originated in the Witbank and Ogies areas of Mpumalanga, while over 1.0 million tons were railed from Richards Bay. Also significant, was coal traffic which transited Gauteng for destinations in the Western and Eastern Cape.

Altogether, 5.6 million tons of coal, 1.0 million tons of manganese and over 6 million tons of coal were consigned to users in Gauteng and a further 5.3 million tons of coal from Limpopo and Mpumalanga transited the province for various domestic and export destinations. As such, the coal consigned to Gauteng itself represented some 58% of all rail traffic forwarded into the province.

Of great significance was the high volume of transit (or bridge) traffic, totalling some 17 million tons and representing nearly 38% of the total Gauteng rail traffic. Of this close to 1.0 million tons consisted of international traffic. As such, it represented between 5 and 6 per cent of total transit traffic, although this has diminished to a degree because of the current economic constraints within Zimbabwe.

An important consideration when examining transit traffic is the fact that Spoornet follows a *route-logic* approach when directing the flow of traffic. The objective is to concentrate traffic on high density corridors wherever possible. For this reason, certain traffic which could reach its destination without passing through Gauteng is actually routed into the province for operating convenience, and ultimately for cost considerations. An example of this is iron ore traffic from the Northern Cape which reaches the "Cape Main Line" at Kimberley and is destined to Newcastle in KwaZulu Natal. Instead of routing this traffic to Bloemfontein and Kroonstad, then Ladysmith via Bethlehem, and finally to Newcastle, this traffic is routed from Kimberley to Potchefstroom, Houtheuwel, Vereeniging and to the Natal Main line via Skansdam and Glenroy.

Similarly, coal traffic for export at Durban is not all routed over the Richards Bay Coal line but some of it enters Gauteng to Welgedacht or Sentrarand, before being directed southwards to the KZN-Natal main line. (Referred to as Natcor in Spoornet terminology).

If there is a disruption on the Kwa Zulu Natal main line, an alternative route for through international traffic to Beit Bridge and north is via Richards Bay through Swaziland to Hoedspruit and Soekmekaar.

An important feature of Gauteng's railway infrastructure is the number of freight by-pass lines constructed in conjunction with the development of the Sentrarand marshalling yard during the 1980's. These lines allow goods traffic to avoid the busy Metro suburban area and offer convenient connections to the Durban and Bloemfontein main lines. It was originally intended to construct a link to the Cape main line to avoid the Vereeniging area and while this was not done, it could be advantageous to do so in the future.

5.2 Rail Freight Tonnages

The following table shows a steady decline in railway general freight (GFB) tons from a high of 135.2 million in 1976, to 93.7 million in 2000. (The figures for 2000 to 2004 are still being sourced from Spoornet and should be available in January 2005, for inclusion in the Final Report).

Spoornet – Net tons ('000 000)				
Year	**Gen. Frt.**	**CoalLink**	**Orex**	**Total**
1950 – 1951	56.4	-	-	56.4
1955 – 1956	67.7	-	-	67.7
1960 – 1961	79.9	-	-	79.9
1965 – 1966	96.5	-	-	96.5
1970 – 1971	109.6	-	-	109.6
1976 – 1977	135.2	5.5	-	140.7
1980 – 1981	146.9	25.0	12.6	184.5
1984 – 1985	132.4	28.0	9.8	170.2
1990 – 1991	112.3	44.0	17.3	173.6
1995 – 1996	100.6	57.4	22.1	180.1
1996 – 1997	99.2	61.2	20.1	180.5
1997 – 1998	101.5	63.1	22.2	186.8
1998 – 1999	95.9	64.7	22.1	182.7
1999 – 2000	93.7	63.5	21.4	178.6
Source for above information: Spoornet 31 May 2000				
2000 – 2001				184.2
2001 – 2002				184.4
2002 - 2003				181.5
2003 – 2004				185.0

Post 2000 traffic details from Statistics SA website

Unconfirmed reports from Spoornet seem to indicate that there has been a further decline in GFB tonnages since 2000, although overall cargo tonnage has increased.

5.3 Rail Freight market Share

To calculate a market share between road and rail freight, road transport and rail transport cargo tonnages are required for the comparable years. Apart from the National Department of Transport's freight databank figures being developed, no accurate national statistics on actual road transport cargo tonnage exist in South Africa at present. To date the national freight databank has only covered the two provinces of KwaZulu Natal and Gauteng. The other provinces are due to be completed by mid 2006. In Gauteng it is estimated that approximately 130 million freight tons are carried on the main road routes in the province, while Spoornet reported 49 million tons of cargo carried by rail.

Without actual road cargo tonnages prior to 2004, another method to estimate a market share change between rail and road transport would be to utilise GDP growth figures. The following table shows GDP growth figures for the past 5 years. These show consistent growth for Gauteng Province. If rail GFB cargo indeed declined during the same period, one could assume that there was a corresponding growth in road freight transport volume.

Constant 2000 prices - GDP percentage changes

Province	1999	2000	2001	2002	2003
Western Cape	3.9	4.2	3.7	4.6	3.2
Eastern Cape	2.4	4.3	2.7	1.2	2.8

Northern Cape	2.7	2.0	-1.7	1.3	1.8
Free State	4.0	2.1	-1.1	3.7	1.9
KwaZulu-Natal	1.0	4.7	4.4	2.1	2.6
North West	1.3	1.5	0.9	1.6	3.8
Gauteng	2.3	5.9	2.3	5.0	2.9
Mpumalanga	2.9	3.1	1.3	2.6	2.1
Limpopo	1.7	0.2	6.8	4.0	2.7
GDPR at market prices	**2.4**	**4.2**	**2.7**	**3.6**	**2.8**

5.4 Rail Freight Significance in Gauteng

A public perception persists that most freight traffic is on South Africa's highways and that rail is no longer very important. This is quite incorrect and certainly more so in Gauteng. Without rail services for the large volumes of bulk traffic such as coal, iron ore and other minerals, maize and wheat, containerised traffic, liquid fuel and chemicals, Gauteng industry would literally close down. As stated, a total of over 49 million tons of rail freight moves through the province of Gauteng per annum. Rail is a very significant provincial transport mode.

Due to the fact that road transport is the most common mode for general freight traffic, including long distance haulage, delivery of consumer goods to retail outlets and industrial freight haulage in urban areas, it tends to be far more visible and intrusive, creating an impression of large scale activity and the transportation of a large tonnage of goods. The reality of the situation however, is that in all probability urban deliveries account for the largest volume of freight transport in the country. Although being developed, South Africa does not currently have a nationally representative data collection system to measure road freight. Therefore all road cargo figures quoted are estimations, based on different assumptions.

Modal traffic statistics are often expressed in terms of annual tonnage conveyed, but this can distort the real picture. For example, current rail tonnages are normally stated as being in the order of 180 million tons per annum while road transport tonnage is reported to be 690 million tons per annum. *(Source: SA. Statistics)* Such figures actually understate the true value and efficiency of rail transport to industrial users.

A more accurate picture emerges if the transportation is expressed in ton-kilometres. As the average length of haul for rail exceeds 500 km, whereas for road it is only about 250 km (and includes local deliveries in urban areas), a different picture emerges when respective ton-km figures are used. For example, 1993 figures as published by Statistics SA are:

Rail:	185 mill. tons (21%)	=	92 500 mill. ton kms (35%)
Road:	690 mill. tons (79%)	=	172 500 mill. ton kms (65%)
Total	875 mill. Tons (100%)	=	265 000 mill. ton kms (100%)

The estimation for these road tonnage figures is understood to be based on the available capacity of road transport vehicles and not on actual tons carried. This assumption can lead to substantial inaccuracies and is, therefore, unreliable when compared to rail transport statistics, which report actual tons carried.

As stated in paragraph 5.3, road cargo tonnages for Gauteng are only available for the current year. The surveys carried out in Gauteng to establish road cargo tonnage for the freight databank, estimated that approximately 130 million tons are carried on the main road routes in the province, while Spoornet statistics report that 49 million tons of rail cargo are carried. Thus rail transport carries a substantial proportion of freight traffic.

A significant factor that should also be considered when evaluating rail transport in Gauteng, is the fact that many bulk commodities are railed from great distances and although the majority of ton-kms are accumulated in other provinces the overall cost effectiveness of the rail service benefits Gauteng industrial output. For example, iron ore traffic originating at Sishen in the Northern Cape, travels 660 km, but only the 89 km section from Potchefstroom to Houtheuwel and the Bijlkor yard at Vanderbijlpark is within Gauteng. In ton-km terms, the total for 3 697 242 tons of iron ore is 2 438 199 720 ton-km but only 328 787 538 ton-km, or 13% of the total, takes place in Gauteng.

Another example which highlights the value of transit traffic passing through Gauteng is international traffic moving from Durban to Beit Bridge and northwards. Expressed in tons the total is 271 621 tons per annum; in ton-kms, it is 366 687 000 ton-km. The total distance from Durban to Beit Bridge is 1 350 km, of which only 164 km, or 12% is within Gauteng. While the Gauteng portion is quite small, the value of the provincial rail system as a transport “bridge” is obvious. A conclusion that can be derived from this is the fact that while the longest “corridor” within the province is less than 200 km, the rail system is essential for the through-working of traffic, both forwarded and received, as well as that which transits the province.

5.5 Summary – Rail Freight Significance:

In Gauteng rail carries 49 million tons of cargo (27%) annually while road carries 130 million tons (73%). Rail is therefore a significant provider of transportation capacity; however, its market share has declined in recent years since transport deregulation, which freed the Administration of former social-service obligations and allowed the Railway’s to decline traffic on offer. It is necessary for the province to monitor this situation. By virtue of the provincial requirement in terms of the NLTTA to provide an integrated modal transport and freight transport plan, it will be necessary for the province to monitor the market share of freight cargo carried by the different modes of freight transport. The Gauteng Freight Transport Databank will facilitate this process.

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6. INTERMODAL SERVICES

6.1 City Deep

The City Deep container terminal is the centre of intermodal movement of containers in Gauteng. The terminal has been accorded the status of an "Inland Port" equipped with Customs and Excise services to permit direct consignment of international cargo to and from Gauteng. Plans to create an adjacent Export Processing Zone (EPZ) have been shelved for the immediate future.

Scope and Location

The terminal occupies about 500 hectares of land to the southeast of the Kaserne yard in the industrial area close to the Johannesburg CBD. The area around the City Deep rail terminal is occupied by a large number of private container terminals, loading yards, offices and road transport company premises.

Rail Access

Access to the City Deep terminal by rail, is via the Kaserne marshalling yard, which is located on the line between Elsburg and New Canada. This line branches from the main north – south line between Pretoria and Durban (and the Bloemfontein – Cape Town line which converges at Union junction). There are also short connecting lines to the Germiston – Krugersdorp line to the north at Driehoek and at Westgate.

The Kaserne yard is approximately 100 hectares in extent and includes the shunting and marshalling space intended for use by the railways CX and PX container services of Spoornet, located at the Kazcon goods handling terminal, now disused and rented to private logistics service providers.

Road Access

The main road access to the City Deep complex is via Vickers Road and Lower Germiston Road with an exit route via Heidelberg Road to the southeast to the N17, from which an overpass gives access to the N3. The Gauteng Blue IQ initiative identified the congestion in Vickers Road as a problem and provided the motivation and funding for improvements to the access roads, via Maritzburg and Ruven Road intersections on the M2. Access to the terminal entrance is frequently congested with numbers of large vehicles awaiting access to load and unload containers,

although some parking space is provided in Heidelberg Road, opposite the terminal gates.

Gauteng Province initiated the Blue IQ project at City Deep Terminal to assist in relieving bottlenecks in the road infrastructure and some improvements have been effected to the traffic flow in the area.

Capabilities

The terminal has four lines equipped with gantry cranes for unloading and loading rail wagons and 9 reach stackers for stacking and retrieving containers from the stacks. The terminal has extensive stacking area estimated to be able to hold 18000 TEUs, and is currently 20% utilised. Crane usage is approximately 58% of capacity, so that there is considerable scope for increasing the throughput of the terminal if additional containers can be attracted to rail transport.

Entrance and Administration building for City Deep Container Terminal. *(Text reference: 6.1)*

Stacking containers at City Deep container terminal. *(6.1)*

City Deep, portal gantries for loading or offloading between rail and road. *(6.1)*

Entrance to private container service provider, City Deep. *(6.1)*

Former PX sheds at Kascon, now run by private operator. *(6.1)*

Aerial view of private container depot in Kaserne area. *(6.1)*

The very extensive private sector container parks are adjacent to the City Deep terminal and offer a range of container services to industries; including storage of full and empty containers, placement and removal of containers for loading, complete coordination of import and export container movements, customs clearing, documentation and provision or coordination of road or rail transport to the ports to match ship stack-open dates.

Many of the terminals are operated by shipping lines as an extension of their international container management and handling activities and, the marketing of the services of these Lines is an important part of the motivation to provide transport and storage services.

Rail Operations

Five return container trains, each with a capacity of 100 TEUs, operate from Durban every day of the week, while two additional trains operate from either Cape Town or Port Elizabeth. Of the Durban trains, two are generally direct train loads to the Spoornet City Deep terminal and the balance for the private service providers.

Container Movements

The estimated total annual movement of containers between the ports and City Deep by road and rail, is shown in the table below for 2002 – 2003.

Table 3.1 – Annual Movements of Containers at City Deep (all modes)

City Deep Inland Dry Port - Container Terminal												
Containers	**Annual TEUs- DCT**				**Annual TEUs - P.E & E.L.**				**Annual TEUs- City Deep Total**			
TEU'S	Full	Empty	Total TEUs	%	Full	Empty	Total TEUs	%	Full	Empty	Total TEUs	%
Received	147,517	177	147,694	55.1%	34,828	42	34,870	51.4%	182,345	219	182,564	54.3%
Dispatched	119,767	741	120,508	44.9%	32,803	203	33,006	48.6%	152,570	944	153,514	45.7%
Total	267,284	918	268,202	100.0%	67,630	245	67,876	100.0%	334,914	1,163	336,078	100.0%
Est. Payload	15	Tons	4,023,030			Tons	1,018,140			Total Tons	5,041,170	

From the above table and known rail movements of containers it can be deduced that a considerable proportion of the container movements to and from Gauteng are by road – approximately 170,000 per annum of which about 113,000 enter the City Deep complex.

Note: It has been announced that a new Container terminal is to be established along the N-3 between Alberton and Heidelburg. This will alleviate the current congestion in the Kaserne/City Deep area and promote for effective road collection and delivery services.

6.2 Pretcon

The Pretoria Container Terminal (Pretcon) was opened in 1989, primarily to provide improved logistical services to the motor vehicle assembly industry in the Rosslyn and Silverton areas. The motor industry, which employs 38,000 people country–wide, and is a major employer of local labour, was established as part

Intermodal services

General view of Pretcon Container Terminal, Pretoria. *(Text reference: 6.2)*

Side-stackers at Pretcon *(6.2)*

Disused former PX sheds at Capital Park, awaiting a new client. *(7.3)*

Eastcon container depot, Dunnotar. *(3.2.1, 6.4)*

Train offloading containers at Valcon container depot, Viljoensdrift. *(6.3)*

Intermodal 6 m open-top containers with lime at Viljoensdrift station. *(6.3)*

of the industrial development initiative through the Motor Industry Development Programme (MIDP).

The Pretcon terminal covers an area of about 10 Ha and has a stacking capacity of about 3 200 TEU's. Unlike City Deep, there are no gantry cranes for loading and re-loading between road and rail. Since container traffic is less than 15% the City Deep volume, reach stackers are used for loading and off-loading. This applies at Eastcon and Vaalcon as well.

Approximately 19,000 import containers are handled each year, from the ports of Durban and Port Elizabeth, made up of vehicles (in CKD form) and vehicle components. Approximately 25,000 containers are railed to the ports and a further estimated 25,000 are transported by road.

Vehicles are also transported from the Tshwane area to the port of Durban for export, in containers, on car carriers, or fully built-up on own wheels.

Two block-load container trains (100 TEU's) are operated from Durban each week, and three to four operated from Port Elizabeth. Most traffic consists of imported parts and motor vehicles received in CKD (crated–knocked–down) form. Distribution to Pretoria and Rosslyn motor manufacturers is by road and this is handled by private service providers. There are several large shipping and forwarding companies which operate in the area. They service their own clients and deal with Spoornet to provide rail services. The recent opening of a shipping line container depot at Rosslyn has diverted traffic from one OEM to that area.

6.3 **Vaalcon** (Viljoensdrift)

The Vaalcon Container Depot in Vereeniging was established in 1993 and currently services two to three major categories of traffic. It is a relatively small depot but could be extended in size for future requirements. Reach stackers currently are used for loading and off-loading. Traffic details are;

- Bulk lime is received from Lichtenburg in 6 metre open-top tipper containers which are transferred to road and taken to several customers in the Vereeniging area. The volume of this traffic is about 250,000 tons per annum (over 12000 container loads).

- The major forwarded traffic is magnesium rock from the large Meyerton smelter and which is loaded into 6-metre containers for export.

- Various Sasolburg industrial producers currently dispatch about 7,000 container loads of export commodities including waxes, solvents and other specialised chemicals. Current volumes have reduced somewhat, due to current exchange rates, from over 10,000 container loads previously carried.

The local logistics service providers are responsible for road haulage of products where relevant, and shipping and forwarding companies use the terminal to service their own clients and deal with railways to provide rail services.

6.4 Eastcon

The Eastcon Container Terminal in Donnottar was developed fairly recently, to provide intermodal rail-road services for numbers of client companies in the Brakpan, Nigel and Springs area. It occupies a small area at present but there is sufficient space for expansion in the future. Reach stackers are used for loading and off-loading.

The terminal handles about 5 000 – 6 000 containers per annum and the volumes are growing, as local customers increasingly specify the use of the terminal to save road haulage from City Deep.

Private container handling companies and the railways service receive import containers and despatch traffic, mainly for export. One private logistics company dispatches and receives about 200 to 300 TEU's per month, and working together with railways, services several clients in the Brakpan, Springs and Struisbult area. The railways handle about 150 to 180 containers per month as direct customer services.

The rail service is twice daily, with containers being placed or collected for transport via Springs, to City Deep for consolidation with received and despatched container traffic at that point.

6.5 Summary – Intermodal Services

There are 4 main Spoornet operated railway terminals that offer an intermodal service between rail and road transport. The largest facility is City Deep, which is substantially underutilised; i.e. the land area is only 20% utilised and cranes only 58%.

Increased utilisation of these facilities could assist the province to manage the distribution of freight transport more equitably.

Intermodal services and yards

Intermodal 6 m containers with lime, being offloaded from rail to road at Valcon. *(Text reference: 6.3)*

Roads trucks with lime at Valcon, preparing for delivery in Vereeniging area. *(6.3)*

Kaserne yard and loco service area. *(7.7)*

Kaserne yard with container trains. *(7.7)*

Improving road access to City Deep at Jupiter. *(6.1)*

Pyramid yard, transfer point from AC to DC voltage railway lines. *(7.13)*

7. MARSHALLING YARDS, LOCOMOTIVES AND RELATED FACILITIES

There are some 20 major goods railway yards in Gauteng *(Sasolburg included as a major source of cargo)*, and 11 of these can be regarded as general traffic marshalling yards, while the others are smaller feeder yards for local industrial areas. The largest is Sentrarand which has a “hump” facility for gravity shunting of wagons into a large classification yard. Two other yards are equipped with hump facilities as well. The total capacity of the major yards is about 21 000 wagons at any one time, of which Sentrarand at 6 860 wagons is the largest. The actual capacity of all yard trackage, including small yards in industrial areas, is probably twice the above estimate.

Yards are a very necessary feature of railway operations, although performance driven operations control are designed to keep wagons on the move and minimise standing time.

The major yards are described below;

7.1 Bijlkor

This is a large yard, having 27 yard lines (referred to as “Roads” in railway terminology) and serving the Vanderbijlpark steelworks and industrial area. Block loads of coal, coke and ore, as well as lime and other commodities are routed into this yard, normally bypassing Leeuhof. The steel producer has its own yard, feeding into the railway’s yard and its own internal rail system

7.2 Boksburg East

There are three yards which fall under Boksburg East. There is a 13 line yard at Boksburg East itself, a 13 line yard at Benoni and a 7 line yard at Dunswart. The combined capacity of these yards is over 600 wagons.

7.3 Capital Park

An important yard, having 52 yard lines with a capacity of about 1600 wagons, and used largely for local traffic within the Pretoria area. Locomotives and train crews operating in the industrial areas such as Waltloo, Pretoria West, and on the DC electrified lines towards Germiston, Witbank and Pyramid South are stationed at the adjacent loco depot. 79 electric locomotives and some diesel locomotives are attached to Capital Park depot.

The extensive former PX sheds, located on the north side of the old Capital Park locomotive shed, once utilised by a private distribution company, are standing empty.

7.4 Cor Delfos

A 13 road yard with a capacity of over 500 wagons and serving the Pretoria steelworks. With the downsizing of production at this plant, the yard is less busy than in the past.

7.5 Elandsfontein / Isando

A large yard serving the Isando industrial complex, as well the line to Kelvin Power Station and Modderfontein. There are 53 yard lines with a capacity of over 1 950 wagons. Cement and grain traffic to Kaalfontein is often staged in this yard. A major rail-rectification facility is located in the area.

7.6 Germiston

Germiston yard is used mainly for distribution of traffic to the industrial areas of Germiston South, Isando and Wadeville. There are 67 yard lines having a capacity of about 1 440 wagons. As such, it is still very important and is an essential component of the rail infrastructure layout of Gauteng. The Germiston locomotive shed has an allocation of 199 diesel and 27 electro-diesel locomotives which are used over a large area including Kaserne yard.

7.7 Kaserne

This large hump yard was formerly the main marshalling yard for Gauteng before Sentrarand yard was established. While its importance may seem to have been reduced, it is still a very busy and important marshalling yard. All container trains in and out of City Deep must pass through Kaserne and it provides storage space for container trains awaiting access to the container

terminal itself. There is an allocation of 149 electric locomotives which are used on various main lines towards KwaZulu-Natal and the Free State.

7.8 Langlaagte

An old marshalling yard having continued importance because of its strategic location for traffic from the south (via Midway) and the west (via Krugersdorp). It also is the staging point for reduced siding traffic in the Industria area. The yard has 49 roads with a capacity of 1 200 wagons and it used for short-term staging of block loads of salt, coal and maize, since the Krugerdsorp yard is used mainly for the Chamdor industrial area traffic.

7.9 Millsite (Krugersdorp)

This facility serves traffic from Gauteng to the North West Province, Mafikeng, Botswana and certain points north. There is a sizable diesel locomotive shed servicing motive power operating on the Mafikeng line and in the West Rand area such as Chamdor. The allocation consists of about 40 diesel and electro-diesel locos, as well as 20 electric locomotives. The adjacent Waterval yard has 5 roads, while nearby Krugersdorp has 14 roads. The combined capacity of the two yards is over 460 wagons.

7.10 Leeuhof (Vereeniging)

Located to the west of Vereeniging on the Midway and New Canada route, this large yard and locomotive facility provides locomotive power the main line and for services in the Vereeniging, Meyerton, Sasolburg area.

Railway yards and related facilities

Brakpan yard, serving Vulcania industrial area. *(Text reference: 4.1.32)*

Leeuhof yard, Vereeniging. *(7.10)*

Sasolburg yard, serving nearby industrial complex. *(7.14)*

Aerial view of Setrarand yard shortly after completion in early 1980's. *(7.15)*

Springs yard with pulpwood wagons from eastern Mpumalanga to Geduld. (7.16)

Class 34 diesels shunting at Springs yard. (7.16)

Leeuhof has an allocation of about 30 locomotives. The 33 road yard has a capacity of about 1 200 wagons.

7.11 Natalspruit

This yard serves the adjacent Alrode industrial complex, as well as the Wadeville industrial area and rail users from Union to Meyerton in the south.

7.12 Pretoria West

The Pretoria West yard provides storage space for traffic to the adjacent industrial area, the Pretoria Industrial area south of the steelworks and in particular, for coal traffic to the municipal power station. As such, it supplements the Cor Delfos yard during busy traffic periods. There are 17 roads having an approximate capacity of 461 wagons.

7.13 Pyramid South

This is the transfer yard for the changeover between the AC lines to the Pietersburg in the north and Rustenburg in the west, and the DC lines to the south and Sentrarand yard. There is an allocation of 107 electric locomotives

which are used on long distance trains to the north, west, south and even as far as northern KwaZulu-Natal.

7.14 Sasolburg

A large yard serving the Sasol industrial complex. Locomotive power and operating staff are provided from Leeuhof.

7.15 Sentrarand

Sentrarand marshalling yard is located about 60 km northeast of Johannesburg. It occupies a space of approximately 6 000 ha. It was originally envisaged that there would be four modules but only one has been developed. The yard consists of a 22 line reception yard, a 64 line classification yard, two secondary sorting yards comprising 10 lines and two departure yards comprising 32 lines. The standing capacity of the yard is about 6 860 wagons.

Rail wagons are shunted over an elevated hump section from where they move by gravity into the classification yard. The rolling speed of wagons is controlled by a system of retarders and accelerators which ensures that no hard coupling to standing wagons takes place.

The purpose of developing this large marshalling yard was to reduce the number of smaller shunting yards in the Gauteng area and to expedite the management of marshalling wagons into effective train order to simplify and speed final delivery to customers. To this end, it was estimated that 48% of traffic handled at the Kaserne marshalling yard was not destined for delivery in the area. Similar conditions were said to prevail at Germiston (57%), Langlaagte (68%), Krugersdorp (81%), Leeuhof (61%) and Capital Park / Pretoria West (64%).

Some 100 trains are received and dispatched each day, although over 150 daily trains have passed through the complex during peak traffic periods. The highest recorded tonnage received on one day exceeds 90 000 tons. There are also electric and diesel running sheds and a wagon maintenance depot. Every wagon received is examined and where necessary, running repairs are carried out.

All link lines are controlled by a CTC system, which covers 221 km of lines. Additional lines, which may be built in the future, could increase this to 400 km. The present staff complement, which includes service personnel, train crews, wagon maintenance staff, permanent-way and signalling infrastructure specialists totals over 1 000 employees. The Sentrarand Complex achieved a 4 star NOSA grading in February 2003, and there have been hazardous chemical assessments as part of on-going safety considerations.

127 electric locomotives are attached to Sentrarand, from where they work over DC lines to various centres in and beyond Gauteng.

7.16 Springs

A medium sized yard with an adjacent loco shed for diesel locomotives which perform local services and operate on the secondary main line to Trichardt and Breyten. This 20 road yard is used for traffic from the synfuel chemical factory at Secunda, as well as forestry traffic from the Lothair area, zinc concentrates that flow to Struisbult, gypsum rock to Vulcania South, container traffic for Eastcon at Donnottar and grain traffic from the Free State and Mpumalanga. Traffic to the industrial areas of Vulcania, New Era and Vorsterkroon is managed from this centre. The yard has a capacity of over 800 wagons.

7.17 Welgedacht

This large hump yard, consisting of 74 roads and having a capacity of about 3 680 wagons was formerly the concentration point for coal traffic from the Witbank area. Much of this traffic now bypasses Welgedacht and is routed to Sentrarand.

7.18 Welverdiend

Junction of the secondary line to Lichtenburg and the main line towards Kimberley, the 19 road yard has a capacity of about 830 wagons. No locomotives are shedded here.

Note: There is additional yard space at a number of stations such as Meyerton, Olifantsfontein, Robinson, Roodekop, Roodepoort, Rosslyn and Waltloo. These smaller yards are holding yards for local traffic and not marshalling yards in the accepted terminology.

7.19 Summary – Yards and Locomotives

Spoornet has consolidated its yard operations in recent years. Many smaller yards including those serving industrial areas such as Benoni South have been closed. Others such as Natalspruit have fallen into disuse. Sentrarand was designed to supplement and even replace some of the smaller yards but with the demise of general freight traffic and the use of private sidings, this has accelerated.

The substantial reduction in general freight traffic, has also resulted in fewer industrial area shunting activities. This has reduced the need for many locomotives formerly employed in these services. It must be pointed out that in the past there were, in fact, too many yards and this contributed to reducing wagon productivity because of the perceived “necessity” to service these yards by running a multitude of local trains (haulers in rail terminology).

The reduced shunting activity and reduced shunting yard areas being utilised, means that this land can be “freed up” for other purposes. Many of these land areas are within or adjacent heavily developed or built up areas, and could possibly be utilised to develop new railway facilities in an effort to

alleviate road cargo traffic congestion; or, provide land area for road traffic facilities (e.g. truck stops, or intermodal facilities).

The province should request Spoornet not to proceed with any development plans for such land areas, before engaging GDPTRW in respect of establishing opportunities for potential road traffic facilities, which could extend beyond freight, to public transport. The NLTTA empowers the province with such a mandate.

Modern electric locomotives awaiting duty at Pyramid South.

Locomotives at Pyramid South. *(7.13)*

Shop locomotive at Koedoespoort Works. *(9.2)*

Germiston wagon repair depot. *(9.3.2)*

8. TRAIN PLANNING, CONTROL AND CUSTOMER SERVICES

8.1 Operational Planning

Spoornet, as the State owned railway monopoly has a central team in Johannesburg who on a daily basis plan train, locomotive and wagon requirements for the country at large, and the Gauteng area in particular. These specialists endeavour to achieve the best balance between user needs, equipment availability and operating costs. The efficiency of one such centrally controlled planning operation for smaller railway users and low tonnage density branchline operations – even those in Gauteng, is however, open to question, and needs to be reassessed. Successful low density rail operations in Australia and the USA are planned locally, which affords a higher degree of participation by the local clients and accordingly more responsive service delivery.

8.2 Train operations and signal control

The important CTC system and associated colour light signal infrastructure in the Gauteng area is controlled from a number of points. The Witwatersrand Metro area is controlled from George Goch, between Johannesburg and Germiston.

The Germiston – Pretoria section and Pretoria Metro area including the Mabopane line is controlled from Irene, while the Germiston – Vereeniging section is controlled from Leeuhof. The Union – Heidelberg and Volksrust CTC section is controlled from Standerton. The Sentrarand yard CTC operations centre controls all 210 kilometres of associated freight bypass lines.

The radio train order (Track Warrant) system used on the Polokwane and Rustenburg lines is controlled from Pyramid South. The Van Schoor controlled lines from Springs to Breyten, Springs to Kaydale, Balfour to Grootvlei are managed locally, as is the Krugersdorp to Mafikeng line. Two sections, the Alberton branch and the Redan – Grootvlei line are controlled locally using the wood staff system.

8.3 Customer Liaison

Spoornet employ customer service specialists who are based at a number of strategic locations within the Gauteng area. This includes Pretoria East and Pretoria West including the Rosslyn industrial area, Krugersdorp, Isando, Springs, Natalspruit, and Sasolburg. These customer liaison representatives maintain contact with customers and the strategic planning section at head office.

8.4 Logistics Services

Although reportedly, Spoornet has had an in-house strategy defined to cater for the door-to-door logistics needs of customers, this seems to have been manifested with customer specific initiatives for mainly the larger tonnage industries. And as far as possible, resources have been concentrated to deliver

the best possible efficiency for such customers. This policy marginalised most small tonnage customers, and the latter moved to road transport.

A lack of rail service delivery due to a shortage of operative locomotives or wagons, merely accelerated this marginalisation, and the subsequent modal shift to road.

On the issue of rail logistics capability, one can conclude that while Spoornet has had the vision to develop logistics systems, it has not had the operational capacity to deliver a comprehensive logistics service to all but a few of its larger customers.

This raises the question of whether Spoornet, considering its operational limitations, should not separate the larger and smaller tonnage customers into two operating divisions. (Note: It is understood that to a degree this is being considered, on the basis of a separate division for “low density lines”). One could carry this logic further by suggesting that the private sector be offered the opportunity to operate certain low density lines or clusters of line.

At present, due to poor service delivery from Spoornet, to meet the ever increasing demands for improved transport logistic efficiency, as the small cargo parcel or low tonnage private sector operators are generally excluded from participation in Spoornet’s railway service, they have developed logistics systems largely based on road. If the Spoornet rail track and cargo facilities were opened to the small tonnage private sector operators on a realistic user fee basis, multimodal logistics systems are bound to materialise. In terms of the NLTTA the province has a mandate to investigate such opportunities and where necessary, facilitate a planning and coordinative process to optimise resource utilisation.

This brief further provides the province with the opportunity to explore areas within Gauteng where the increased use of short haul rail for cargo delivery could reduce the growth of road cargo.

9. TRAINING FACILITIES AND MAINTENANCE OF ROLLING STOCK

9.1 Railway College: Esselen Park

This educational institution was established in the late 1940's, with a view to training professional and artisan workers for the railway service. It grew over the years and for a time during the 1960's over 2 500 students were registered at any one time. There was a period during the 1980's and 1990's when enrolments were in decline but with the recent restructuring of railways student numbers have increased. There are currently over 500 students and this is set to increase.

9.2 Koedoespoort Workshops

This is the largest and most modern railway workshop complex in South Africa; having been developed on 20 hectares of land in the 1950's, Koedoespoort celebrated 50 years of operation during October 2004. It is now part of the Transwerk division of Transnet and undertakes work for the private sector, as well as railways. At one time the staff complement reached 6 000, but this is currently about 1 500.

Koedoespoort also overhauls Metrorail coaches, and more recently the "10 M3" train sets, and the Blue Train coaches. With the impending acquisition of new locomotive and wagons and the need to accelerate the rebuilding of older equipment, the continued and expanded use of this facility is assured. The workshops currently overhaul about 60 electric locomotives per annum (6E and 10E) and have specialised in the conversion of 6E locomotives to 18E's. This work has included fitting of the most up to date control systems and associated components, extending the useful life of these locomotives for another 20 years.

9.3 Germiston Workshops

A large workshop facility that maintains both locomotives and wagons as detailed below:

9.3.1 Germiston diesel loco works

A large number of electric locomotives are stationed at this depot which supplies motive power for long-distance passenger services, goods trains and local hauler operations along the Reef.

9.3.2 Germiston wagon workshops

This facility specialises in maintenance for the tanker wagon fleet. The current staff of 300 overhaul about 240 tank wagons every month. This includes minor work and heavy overhauls. The staff compliment has increased and is expected to increase still further.

9.4 Langlaagte Shops

A small facility that performs sub-contract works to larger workshops such as Koedoespoort. This includes overhauling traction motors and related components.

Sign at entrance to Esselen Park
(Text Reference: 9.1)

Signal school and old semaphore signal at Esselen Park. *(9.1)*

Students writing exams at Esselen Park signal school. *(9.1)*

Demonstration of signal equipment. *(9.1)*

10. SUPPORT AND SERVICE PROVIDING COMPANIES

While the National Railway Administration in South Africa has traditionally provided most of its own maintenance requirements, there has been a trend toward use of private sector service providers, which is likely to increase rapidly with current plans to recapitalise and expand rail operations.

Several of the companies have been supplying services to railways for many years and have international experience, advanced technology and provide other support services in Africa.

Details of some of the specialist railway support companies operating in Gauteng are shown in Appendix C.

11. FUTURE OF RAIL FREIGHT IN GAUTENG

Rail provides vital transport support to heavy industry in Gauteng. It is also essential for grain transport, the movement of containers and for commuter passenger transport. The public are generally not aware of this fact, since they share the highways with heavy road transport vehicles and this creates an impression that most freight traffic is on road. In contrast, railway operations take place largely out of sight of the motorist. The recent freight traffic survey undertaken in Gauteng to provide information for the provincial freight transport databank, revealed that on the main road routes approximately 130 million tons of cargo is moved by road transport, while 49 million tons of cargo is moved annually by rail.

Gauteng province can ill-afford a continued decline in rail cargo market share, and should set up a task team with Spoornet to identify possible provincial interventions that could encourage greater rail usage; e.g.: increased number of intermodal (rail to road) facilities, road capacity classifications, road freight route restrictions, improved overloading control, etc.

The railways share of general freight traffic has diminished in recent years but considering present government investment initiatives this is now likely to start growing. From an environmental viewpoint, as highway congestion increases and pollution from diesel road vehicles becomes a major issue, rail transport will provide a better transport alternative. Increased rail usage has been the trend in most developed countries and should follow in South Africa, but will require joint planning between the railway operator, provincial and national government.

Greater use of road/rail intermodal operations at strategically placed industrial parks and intermodal terminals (hubs), would also contribute to reducing traffic congestion. Gauteng has well developed industrial parks and many of these have been provided with substantial rail infrastructure. It is necessary to ensure that none of these facilities are decommissioned before a proper evaluation is made as to how they could be better utilised in the future. An analysis of private sidings should also be undertaken to determine their potential usage. While intermodal transport with rail for the long haul and road for final delivery or collection has its advantages, initiatives to increase utilisation of existing private sidings should be seen as a priority, as this could substantially reduce the volume of this road freight traffic. This could be a joint Spoornet/GDPTRW initiative.

Some three years ago, national government at Cabinet level approved a general policy to encourage greater use of rail transport. This resulted in a complete evaluation of the assets, liabilities and market status of Spoornet the state run railway. The recently announced R15 billion recapitalisation programme is the first major state intervention to address declining rail cargoes. For Gauteng Province to ensure maximum benefit from this railway investment programme, joint planning with Spoornet will be necessary. *Please note the latest developments and the plans to invest over R 300-bn in new rail infrastructure, locomotives and rolling stock. This is a most encouraging development and it is hoped that rail will regain some of its lost traffic as a result.*

An increase in rail market share assumes that the substantial investment planned for rail infrastructure, rolling stock and locos will facilitate a significant improvement in rail service delivery. It must be appreciated that as Spoornet's investment programme has barely commenced, there will be some delay before an overall improvement in service delivery is evident. In this respect Spoornet are likely to follow a targeted marketing approach, concentrating initially on specific commodities or areas. The province need to ensure that Spoornet's targeted areas for improved performance are in line with provincial developmental plans.

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APPENDICES

INTRODUCTION TO APPENDIX INFORMATION

Spoornet has supplied traffic, commodity and transport volume information which is reproduced in the following Appendices.

Appendix 1 details traffic to and from points within certain identified corridors. It must be understood that this does not include traffic which transits those corridors. For example, on the section between Union and Volksrust, there is no originated or received traffic at various stations. Instead, the traffic is transit or through traffic, originating at either City Deep or at the Durban Container Terminal for example. Appendix B details this information.

Appendix B details commodities and the associated transport movements for originated (forwarded) traffic, received traffic, inter-provincial and bridge traffic (transit). This is a useful indicator of commodity movements and has been re-formatted to show general traffic movements.

Appendix C identifies companies which supply specialised services to the railway industry, both private and public (parastatal). These companies supplement the in-house service providers linked to Transnet and many have specialised international experience essential to the efficient working of the rail system in South Africa. As such, they are an indispensable part of the railway industry in Gauteng.

APPENDIX A

APPENDIX A - Rail Freight Commodities by Line Sector
Table 1 – Germiston-Pretoria-Pietersburg-Beit Bridge

GERMISTON-PRETORIA-PIETERSBURG-BEIT BRIDGE

Received Traffic	Annual Tons				Forwarded Traffic	Annual Tons			
Commodity	**Isando**	**Pretoria**	**Pietersburg**	**Total**	**Commodity**	**Isando**	**Pretoria**	**Pietersburg**	**Total**
Ammonia Anydrous Liquor	173,439			173,439	Ammonia Anhydrous Liquor	1,843			1,843
Ammonium Nitrate			67	67	Ammonium Nitrate	17,278			17,278
Anthracite Eohp	2,608			2,608	Bentonite in open wagons	40			40
Aviation Gasoline In T/WA	3,123			3,123	Blocks Eohp	30		4,423	4,453
Aviation Turbine Fule T/W	389,461		4,389	393,850	Bran Oats Etc		5,277		5,277
Bagged Cement Shrink Wrap	477,576		96,235	573,811	Cement Ordinary		2,288		2,288
Bark Eohp	2,160		520	2,680	Cement Ordinary in T/Wagon			94	94
Bauxite (Aluminium Clay)	1,549			1,549	Cement Refractory	134			134
Beans Etc		1,221		1,221	Chemicals in T/Wagons	322			322
Beer Ind Ale & Stout			6,246	6,246	Coal Eohp		1,871	434,499	436,370
Bottles Jar & Trade Containers			998	998	Coke Eohp	108		964	1,072
Bran Oats Etc	1,089			1,089	Diesel Fuel Oil T/Wagons	104			104
Cement Clinker		144,426		144,426	Dolomite in open Bogie WA	34,129	303,524		337,653
Cement Ordinary	15,840		13,816	29,656	Earth Etc Crude	251			251
Cement Orinary in T/Wago	296,758	76	30,923	327,757	Electric Appliances/Artic	8			8
Chemicals in T/Wagons	5,077			5,077	Empty Cont for NWB/NOB			161	161
Coal Eohp	1,147,178	601,319	46	1,748,543	Explosives and Acc min 3To	176			176
Coke Eohp	15,336			15,336	Fertilizer in liquid for/	9,138			9,138
Diesel Fuel Oil T/Wagons	9,388	263	183,962	193,613	Flour Spar			139,242	139,242
Earth Etc Crude	1,680	2,216		3,896	Foodstuffs and beverages	33			33
Empty containers for NWB/			168	168	Fruit Citrus			13,195	13,195
Explosives & Acc Min 13To	17		2	19	Glass broken			2,848	2,848
Fertilizer in liquid for	30			30	Grain and products	14,047			14,047
Fly ash in tank wagons	40			40	Granite or granite chips	37	28	40,653	40,718
Gas in tank wagons			5,181	5,181	Gypsum Eohp	14,746	456		15,202
Grain and products	22			22	Hardware Eohp	460	150	100	710
Grain Sorghun Loose	44		8,454	8,498	Illuminating Paraffin T/W			932	932
Granite or granite chips	1,017			1,017	Infrastructure (Stone)	1,748	2,114	6,477	10,339
Gypsum Eohp		13,608		13,608	Iron or Steel	3,333	206		3,539
Hardware Eohp	468	100	180	748	Kiesel Guhr (Diatomaceous	12			12
Infrastructure (stone)	25,897	5,846	11,587	43,330	Light CX Containers Road			7	7
Illuminating paraffin T/W			17,730	17,730	Lime Unslated Hydrated LO	39		1,212	1,251
Iron or steel	49,866	2,755		52,621	Limestone bag/loose open			200,556	200,556
Light CX Container road			83	83	Limestonepowder BOT DIS W	43			43
Lime unslated hydrated Lo	45			45	Machines Etc (not motor v	15			15
Limestone Bag/Loos open		530,602		530,602	Maize in bags EXP			10,659	10,659
Limestonepowder BOT DIS W	43			43	Maize Loose	6,893		5,769	12,662
Magnesite	1,952			1,952	Memorials or tombstones	94			94
Malt			11,946	11,946	Metal Scrap	30,382	3,556	304	34,242
Maize Loose	169,145	106,051	277,963	553,159	Military Equipment		1,109		1,109
Meal and flour wheaten et		220		220	Molasses can solublen T/W	4,047			4,047
Metal Scrap	581			581	Molasses in T/Wagons	10,186			10,186
Military Equipment		738		738	Motor selfpropelled vehicle	22,666			22,666
Molasses can soluble T/W	6,065	377		6,442	Oil cake meal and flour	924			924
Molasses in T/Wagons	81,884		74	81,958	Oil Lubricating in T Truc			39	39
Motor selfpropelled vehicle	97,344			97,344	ORS	121	20	393	534
Oil Cake Meal & Flour		6,022		6,022	P6M Cont Dangerous Goods	17,981		19	18,000
Oil Eohp	39			39	P6M Cont Heavy >12.5t<22	34	122	9,850	10,006
Oil Lubricating	39			39	P6M Cont Light >1KG<1249	11	174	8	193
Oil Lubricating in T Truc	363		137	500	P6M Cont O mass >22001KG	118			118
Oil Vegetable Crude T/W	3,407			3,407	P6M Cont Exp Heavy >12.5T			453	453
Ornaments			542	542	P12M Cont Exp Light >1KG			20	20
ORS	232	2	1,358	1,592	P12M Cont Light >1KG<243		108	380	488
Other gasses and mixtures	297			297	Petalite			438	438
P12M Cont light >1kg <243	15		21	36	Petrol in T/Wagons			4,840	4,840
P6M Cont dangerous goods	531			531	Petrol unleaded in T/Wagon			659	659
P6M Cont Heavy >12.5T <22			833	833	Railway Material	1,600	315	143	2,058
P6M Cont light >1kg <1249	54		799	853	Rec Full empty return (Con	492		200	692
Petroleum coke	43		2,052	2,095	S3M Cont Empty			3	3
Petrol unleaded in T/Wagons			67,065	67,065	S3M Cont Light >1KG<9000			1,125	1,125
Petrol in T/Wagons			224,313	224,313	S6M Cont Heavy >12.5T<22			93	93
Priv. Rolling Stock (Haula	85			85	S6M Cont Light >1KG<1249			173	173
Railway Material	5,143	569	706	6,418	Service Execution	101	20	342	463
Rapid Hardening Cement T/	4,665		432	5,097	Slag Iron or Steel	39		3,454	3,493
Rec. Full empty return (Con			61	61	Stockfeed and stock licks	1,005			1,005
S3m Cont light >1kg <9000		6	166	172	Sulphuric Acid	207			207
S6M Cont Light >1KG<1249	9		391	400	Toys Etc		1,620		1,620
S3M Cont empty			3	3	Traction	1,406	28	104	1,538
S3MT Danger goods			12	12	Vessels Wagon RTC	10			10
S6M Cont Heavy >12.5T<22			724	724	Wagons	8,812	607	687	10,106
Salt	529		88	617	Water			166	166
Service Execution	399	546	639	1,584	Wheat Loose Eohp	31,559	968	88	32,615
Special & Amusement park TR		1,010		1,010	Wooden Poles			1,072	1,072
Stockfeed and stock licks	463			463	**TOTAL**	**236,762**	**324,561**	**886,844**	**1,448,167**
Sugar loose	61,870			61,870					
Sulphuric Acid	2,922			2,922					
Sunflower seed	2,758			2,758					
Toys Etc		570		570					
Traction	1,616	24	142	1,782					
Wagons	5,648	606	515	6,769					
Water			166	166					
Wheat Loose Eohp	24,671	146,849	61,050	232,570					
Wooden and Woodpulp artic		46		46					
TOTAL	**3,092,520**	**1,566,068**	**1,032,785**	**5,691,373**					

Annual Tons Received and Forwarded by Line Sector
Table 2 – Pretoria-Witbank-Komatipoort

PRETORIA-WITBANK-KOMATIPOORT

Received Traffic	Annual Tons				Forwarded Traffic	Annual Tons			
Commodity	Pretoria	Nelspruit	Witbank	Total	Commodity	Pretoria	Nelspruit	Witbank	Total
Aluminium Sulphatein Solu		2,068		2,068	13.5M Bimo Free on Rail O			103	103
Ammonia Anhydrous Liquor		618	429	1,047	Ammonia Anhydrous Liquor		99	21	120
Anthracite Eohp			74,763	74,763	Anthracite Eohp		7,818	480	8,298
Aviation Turbine Fuel T/W	30			30	Black Liquor in Tank Wagon		10,880		10,880
Bagged cement shrink wrap		53,368		53,368	Bottles Jar & Trade Conta		998		998
Beer Ind Ale & Stout		58,961		58,961	Bran Oats Etc		50		50
Bentonite in open wagons		220		220	Char (degassed coal)			14,223	14,223
Black liquor in tank wagons		979		979	Chemicals			1,344	1,344
Bricks not paletised			1,529	1,529	Chrome Ore an Sand			2,024	2,024
Cement ordinary		3,388		3,388	Coal Eohp		47	1,434,022	1,434,069
Cement ordinary in T/Wagons		25,398		25,398	Coal Export for direct sh		-1,200	285,708	284,508
Chrome Ore and Sand			1,085,986	1,085,986	Coal Export for stacks		86,342	950,399	1,036,741
Coal Eohp		580,026	431,923	1,011,949	Coke Eohp			2,902	2,902
Coal Export for stacks		1,460		1,460	Diesel Fuel Oil T/Wagons	264,825		142,813	407,638
Coke Eohp			135,331	135,331	Earth Etc Crude	25,416			25,416
Diesel Fuel Oil T/Wagons	2,603	98,118	2,126	102,847	Electrode Paste/Powder/BL			498	498
Dolomite in open Bogie Wagon			404,731	404,731	Empty containers for NWB/NQB		236	4,475	4,711
Earth ETC Crude	2,992			2,992	Explosives and ACC min 3TO	1,062			1,062
Empty containers for NWB/		211		211	Fertilizer Eohp			220	220
Ferrochrome			2,022	2,022	Fertilizer in liquid for/			2,847	2,847
Ferro Manganese Silicon			7,172	7,172	Ferro Manganese Silicon			86,465	86,465
Fertilizer Eohp		499	1,360	1,859	Ferrochrome			607,305	607,305
Fertilizer in liquid for/			4,740	4,740	Flour Spar			272	272
Gas in tank wagons	6,707	1,584		8,291	Foodstuffs and beverages			91	91
Hardware Eohp	100		140	240	Fruit Citrus		29,748		29,748
Illuminating Paraffin T/W	46,592	9,042	13,115	68,749	Glass Broken		738	455	1,193
Infrastructure (Stone)	17,618	38,530	17,332	73,480	Granite or Granite Chips	28	2,110	12,347	14,485
Iron or steel	519		1,748	2,267	Hardware Eohp	80		180	260
Iron Ore			2,329,343	2,329,343	Illuminating Paraffin T/W	555		789	1,344
Light CX Containers road		385	13	398	Infrastructure (Stone)	21,855	31,523	69,493	122,871
Lime Eohp in T Trucks		1,193		1,193	Iron or Steel	206	466	720,510	721,182
Limestone bag/loose open			836	836	Light CX Containers road		274	52	326
Limestone powder Bot Dis W			935	935	Lime Eohp in T Trucks		73		73
Lime unslake in Bot Dis W		2,941	32,322	35,263	Lime Unslated Hydrated LO			2,282	2,282
Lime unslated Hydrated LO			150,052	150,052	Maize Loose	5,587		44,720	50,307
Magnetite		724		724	Maize Loose Exp			2,777	2,777
Maize loose	135,272	19,549		154,821	Maize in bags EXP			1,504	1,504
Maize in bags		3,655		3,655	Metal Scrap	3,609		31,818	35,427
Manganese Crude Dioxide E		112,799	335,705	448,504	Molasses in T/Wagons		8,488	361	8,849
Metal Scrap	1,492	21	97,081	98,594	Molasses in T/Wagons		70,750		70,750
Minicon/Parcel order & re	10			10	Motor selfpropelled vehicle		179		179
Mining Timber		129		129	ORS	2,629	467	69	3,165
Molasses in T/Wagons		21,416	2,183	23,599	Othe Ores mineral crude		23,897		23,897
Oil Lubricating	34			34	P6M Cont Dangerous Goods	3,074	40		3,114
Oil lubricating in T Truc	174	136		310	P6M Cont Heavy >12.5T<22	31	52,887	33,166	86,084
ORS	475	1,037	359	1,871	P6M Cont Light >1KG<1249		9	87	96
Other Ores Mineral Crude			23,897	23,897	P6M Cont O Mass >22001KG		46	470	516
Paper articles / other paper			180	180	P6M Cont Exp Heavy >12.5T			540	540
P6M Cont Heavy>12.5t <22		981	40,715	41,696	P12M Cont Light >1KG<243		6		6
P6M Cont Light >1KG <1249		55	284	339	Paper Reels for cardboard		115,348		115,348
P6M Cont dangerous goods	17			17	Paper Reels for Newspaper		39		39
P6M Cont O Mass >22001kg			1,551	1,551	Petrol in T/Wagons	203,969	123	35,307	239,399
P12M Cont Heavy >24T<294		1,344	282	1,626	Petrol unleaded in T/Wagons	63,535		434	63,969
P12M Cont Light >1kg <243		24	803	827	Pulpwood (Hard wood)		12,461	35,528	47,989
Paper reels for cardboard		1,757		1,757	Pulpwood (Soft wood)		11,218	10,150	21,368
Petrol in T/Wagons	23	110,743		110,766	Railway Material	5,225		70	5,295
Petrol unleaded in T/Wagons	133	43,792	33,063	76,988	Rec full empty return (Con		34,708		34,708
Phosphoric acid or paste			7,558	7,558	Rutile Sand	176			176
Potassium Chloride Etc		1,527	1,096	2,623	S3M Cont Bulk			351	351
Priv. rolling stock (Haula		20		20	S6M Cont Bulk			30,520	30,520
Pulpwood (Hardwood)		71,492	-34	71,458	S3M Cont Light >1KG<9000		391	1,570	1,961
Pulpwood (Softwood)		531,035		531,035	S3M Cont Overmass >9001KG			23	23
Railway Material	6,437	615	191	7,243	S6M Cont Heavy >12.5T<22		50,133	1,342	51,475
Rapid hardening cement t/		384		384	S6M Cont Light >1KG<1249		99	92	191
Rec full empty return (con		5,754		5,754	S6M Dangerous Goods - Cont		44		44
S3M Cont Light >1KG<9000		322	31	353	Service Execution	457	160	86	703
S6M Cont heavy >12.5T<22	14	933		947	Silica	65,057			65,057
S6M Cont light >1kg<1249		467	78	545	Stockfed and stock licks		19,135		19,135
S6M Dangerous goods - Cont	25	12	16	53	Sugar Loose		90,855		90,855
S3M Cont Overmass >9001KG			9	9	Textile Waste	436			436
Salt			705	705	Toys Etc		1,170	800	1,970
Service Execution	663	1,940	333	2,936	Traction	3,973	2,461	1,040	7,474
Silica			191,406	191,406	Vanadium Slag			40,828	40,828
Sleepers and beams concre		3,257		3,257	Wagons	1,604			1,604
Special & Amusement park Tr			800	800	Waste by-produts			3,002	3,002
Sulphur and sulphur powder		80		80	Water		5,278		5,278
Sulphur acid		12,031		12,031	Wheat Loose Eohp	8,575			8,575
Toys Etc		800		800	Woodpulp bleached		107,549		107,549
Traction	4,782	1,053	580	6,415	Woodpulp unbleached All W		45,384		45,384
Urea Eohp		1,139	1,797	2,936	**TOTAL**	**681,964**	**823,527**	**4,618,975**	**6,124,466**
Vermiculite		85		85					
Wagons	3,228	150	56	3,434					
Water		5,250	20	5,270					
Wheat in bags	352			352					
Wheat loose Eohp	67,934			67,934					
Wood saw timber		185		185					
TOTAL	**298,226**	**1,835,682**	**5,438,693**	**7,572,601**					

Annual Tons Received and Forwarded by Line Sector
Table 3 – Apex-Welgedacht-Ogies-Witbank

APEX-WELGEDACHT-OGIES-WITBANK

Received Traffic	Annual	Tons		Forwarded Traffic	Annual	Tons	
Commodity	**Ogies**	**Witbank**	**Total**	**Commodity**	**Ogies**	**Witbank**	**Total**
Ammonia Anhydrous Liquor	2,670		2,670	Ammonia Anhydrous Liquor	61		61
Bran Oats Etc	2,328		2,328	Anthracite Eohp		480	480
Chrome Ore an Sand		400,455	400,455	Char (degassed coal)		14,223	14,223
Coke Eohp	263	69,264	69,527	Boards/Sheets	379		379
Diesel Fuel Oil T/Wagons		2,125	2,125	Coal Eohp	3,878,996	34	3,879,030
Earth Etc Crude	251		251	Coal Export for direct sh	178,473		178,473
Fertilizer Eohp	2,964		2,964	Coal Export for stacks	11,734,498	424,453	12,158,951
Hardware Equipment	320		320	Coke Eohp		1,450	1,450
Illuminating paraffin T/W		13,115	13,115	Diesel Fuel Oil T/Wagons		142,813	142,813
Infrastructure (Stone)	18,419	1,028	19,447	Electrode paste/powder/BL		498	498
Iron or steel		78	78	Empty Cont for NWB/NQB	2,638	2	2,640
Iron Ore		781,774	781,774	Ferrochrome		294,806	294,806
Light CX Containers Road		13	13	Ferro Manganese Silicon		5,228	5,228
Maize loose	2,678		2,678	Fertilizer Eohp	39		39
Metal Scrap	39	35	74	Fertilizer Organic Eohp	20		20
Molasses can solublen T/W	965		965	Glass Broken		379	379
Molasses in T/Wagons	563		563	Hardware Eohp	310	80	390
ORS		8	8	Illuminated paraffin T/W		789	789
Petrol unleaded in T/Wagons		33,063	33,063	Infrastructure (Stone)	2,007	43,195	45,202
P6M Cont Light >1KG<1249	224		224	Ligh CX Containers road		52	52
Phosphoric acid or paste	11,500		11,500	Lime in bags	20		20
Railway Material	311	84	395	Maize in bags Exp	203		203
S3M Cont Light >1KG<9000		31	31	Maize loose	30,464		30,464
S3M Cont overmass >9001kg		9	9	Maize loose Exp	15,429		15,429
S6M Cont Light >1KG<1249		78	78	ORS	120	68	188
S6M Dangerous goods - cont		16	16	P6M Cont Empty	20		20
Salt	1,103		1,103	P6M Cont Heavy >12.5T<22	1,968	18,937	20,905
Service Execution	785	281	1,066	P6M Cont Exp Heavy >12.5T		540	540
Silica		80,809	80,809	P6M Cont O Mass >22001KG	176		176
Special & Amusement park Tr		800	800	Petrol in T/Wagons		35,307	35,307
Traction	308	550	858	Petrol unleaded in T/Wagon		434	434
Wagons	445	56	501	Railway Material	256		256
Waste by-products	3,002		3,002	S3M Cont Light >1KG<9000	2,113	15	2,128
Water	2	20	22	S6M Cont Bulk	23,009		23,009
TOTAL	**49,140**	**1,383,692**	**1,432,832**	S6M Cont Heavy >12.5T<22	158	53	211
				S6M Cont Light >1KG<1249		92	92
				Salt	44		44
				Service Execution	8,207	54	8,261
				Silica	399,267		399,267
				Toys Etc		800	800
				Traction	163	1,040	1,203
				Wagons	538		538
				Waste by-products		3,002	3,002
				Water	25,413		25,413
				Wheat Loose Eohp	2,154		2,154
				TOTAL	**16,307,143**	**988,824**	**17,295,967**

Annual Tons Received and Forwarded by Line Sector
Table 4 – Krugersdorp-Johannesburg-Germiston-Springs

KRUGERSDORP-JOHANNESBURG-GERMISTON-SPRINGS							
Received Traffic	**Annual**	**Tons**		**Forwarded Traffic**	**Annual**	**Tons**	
Commodity	**Springs**	**Krugersdorp**	**Total**	**Commodity**	**Springs**	**Krugersdorp**	**Total**
Barley EOHP		200	200	Coke EOHP	51		51
Cement Clinker		357,782	357,782	Diesel Fuel Oil T/Wagons		228	228
Cement ordinary in T/Wagon	391,014		391,014	Earth Etc Crude		3,800	3,800
Chemicals in T/Wagons		37	37	Foodstuffs and beverages		34	34
Coke EOHP	190		190	Hardware EOHP	80	160	240
Diesel Fuel Oil T/Wagons	5,594	27,777	33,371	Infrastructure (Stone)	43,098	10,306	53,404
Dolomite in open bogie wagon	352		352	Limestonepowder BOT DIS W	978		978
Earth Etc Crude		6,026	6,026	Maize Loose Exp		45	45
Empty containers for NWB/		4	4	Meal and flour wheaten et		37	37
Gas in tank wagons		2,249	2,249	Metal Scrap		21,015	21,015
Glass broken	690		690	ORS	87	34	121
Gypsum EOHP	87,113	109	87,222	Petrol unleaded in T/Wagon		36	36
Hardware EOHP	100	220	320	Pipes Cement and Concrete		580	580
Illuminating paraffin T/W		7,435	7,435	Railway Material	567	2,450	3,017
Infrastructure (Stone)	4,496	14,598	19,094	Service Execution	1,330	382	1,712
Iron or steel	384	1,112	1,496	Sleepers and Beams Concrete	13,811		13,811
Kiesel Guhr (Diatomaceous earth)		370	370	Special & Amusementpark TR		2,670	2,670
Lime in bags	108		108	Sulphuric Acid	809		809
Limestone powder Bot D/S W	30,663		30,663	Traction	88	465	553
Maize Loose		59,275	59,275	Wagons		20	20
Manganese Crude Dioxide E		15,847	15,847	**TOTAL**	**60,899**	**42,262**	**103,161**
Malt		16,926	16,926				
Molasses in Tenkers-Swazil		19,844	19,844				
Molasses can soluble in T/W		378	378				
Molasses in T/Wagons		32,442	32,442				
Oil Cake Meal & Flour		7,174	7,174				
Oil Eohp		18	18				
Oil Lubricating in T Truck		19	19				
Petrol unleaded in T/Wagon		23,968	23,968				
Railway Material		1,732	1,732				
Rapid hardening cement T/wagon	1,697		1,697				
S3M Cont Light >1KG<9000		6	6				
S3M Cont Overmass >9001kg		10	10				
Service Execution	376	251	627				
Slag iron or steel		151	151				
Sleepers and beams concre		63	63				
Special & Amusementpark TR		1,705	1,705				
Stockfeed & Stock Licks		178	178				
Sulphur and Sulphur powder		125	125				
Toys etc		2,490	2,490				
Traction	94	270	364				
Wagons		30	30				
Wheat in Bags		1,494	1,494				
Wheat loose EOHP		135,650	135,650				
TOTAL	**522,871**	**737,965**	**1,260,836**				

Annual Tons Received and Forwarded by Line Sector
Table 5 – Springs-Bethal-Breyten

SPRINGS-BETHAL-BREYTEN						
Received Traffic	**Annual**	**Tons**		**Forwarded Traffic**	**Annual**	**Tons**
Commodity	**Ogies**	**Springs**	**Total**	**Commodity**	**Springs**	**Total**
Infrastructure (Stone)	1,488	682	2,170	13.5M Bimo free on rail O	2,378	2,378
Lime in bags		108	108	Ammonia Anhydrous Liquor	175,733	175,733
Service Execution		137	137	Bran Oats Etc	50	50
Iron or steel		350	350	Chemicals in T/Wagons	305,866	305,866
Plastic Moulding Comp. Et		827	827	Coal EOHP	3,505	3,505
Millscale		31,125	31,125	Coal Export for stacks	3,698,788	3,698,788
Light CX Container Road		16	16	Diesel Fuel Oil T/Wagons	55,908	55,908
Maize Loose		31	31	Ethanol in T/Wagons	76,866	76,866
Maize Loose		83	83	Fertilizer EOHP	10,605	10,605
P12M Cont Light >1KG<243		0	0	Gas in tank wagons	39,958	39,958
Infrastructure (Stone)		40	40	Grain Sorghum Loose	352	352
Diesel Fuel Oil T/Wagons		282	282	Hardware EOHP	170	170
P6M Cont Heavy >12.5T<22		125	125	Illuminating Paraffin T/W	153,133	153,133
Chemicals		198	198	Infrastructure (Stone)	262	262
Bran Oats etc		425	425	Limestonepowder BOT DIS W	978	978
Ammonia Anhydrous Liquor		773	773	Maize in Bags Exp	7,580	7,580
Gypsum EOHP		87,113	87,113	Maize Loose	54,212	54,212
Chemicals in T/Wagons		500	500	Maize Loose Exp	3,712	3,712
Maize Loose		8,560	8,560	Methanol in T/Wagons	62	62
Salt		44	44	ORS	160	160
Bran Oats ETC		1,335	1,335	P12M Cont Exp Heavy >24T-2	76	76
Hardware EOHP		60	60	P12M Cont Exp Light >1kg	18,502	18,502
Infrastructuer (Stone)		3,734	3,734	P12M Cont Heavy >124t<294	1,284	1,284
Service Execution		44	44	P12M Cont Light >1KG<243	4,602	4,602
Traction		44	44	P6M Cont Dangerous Goods	2,168	2,168
Hardware EOHP		100	100	P6M Cont Exp D Goods	684	684
Glass Broken		690	690	P6M Cont Exp Heavy >12.5T	50,247	50,247
Limestonepowder BOT DIS W		30,663	30,663	P6M Cont Heavy >12.5T<22	45,957	45,957
Dolomite in open Bogie W		352	352	P6M Cotn O Mass >22001KG	51	51
Wagons		30	30	Petrol in T/Wagons	81,577	81,577
Ammonia Anhydrous Liquor		31	31	Petrol Unleaded in T/Wagon	79,190	79,190
Hardware EOHP		40	40	Pitch Coke	82,690	82,690
Illuminating Paraffin T/W		111	111	Railway Material	567	567
Ethanol in T/Wagons		277	277	S3M Cont Light >1KG<9000	1,353	1,353
Salt		528	528	S3M Cont Overmass >9001KG	638	638
Ammonium Sulphate EOHP		597	597	S6M Cont Heavy >12.5T<22	3,240	3,240
P6M Cont Dangerous Goods		1,046	1,046	Service Execution	400	400
Petrol in T/Wagons		1,174	1,174	Stockfeed Lucerne Etc	6	6
Oil EOHP		1,892	1,892	Sulphur and Sulphur Powder	97,646	97,646
Diesel Fuel Oil T/Wagons		3,391	3,391	Sulphuric Acid	809	809
Methanol in T/Wagons		9,138	9,138	Tar acid mixture crude	71,317	71,317
Caustic Sode E)HP		28,534	28,534	Textile Waste	528	528
Ammonium Sulphate EOHP		3,823	3,823	Traction	88	88
Potassium Chloride ETC		16,915	16,915	Wheat Loose EOHP	88	88
Phosphoric Acid or paste		95,828	95,828	**TOTAL**	**5,133,986**	**5,133,986**
P6M Cont Dangerous Goods		160	160			
Traction		50	50			
Service Execution		195	195			
Diesel Fuel Oil T/Wagons		5,312	5,312			
TOTAL	**1,488**	**337,513**	**339,001**			

Annual Tons Received and Forwarded by Line Sector
Table 6 – Union-Bloemfontein-Vereeniging

UNION-BLOEMFONTEIN-VEREENIGING

Received Traffic	Annual		Tons	Forwarded Traffic	Annual		Tons
Commodity	Bloemfontein	Vereeniging	Total	Commodity	Bloemfontein	Vereeniging	Total
Ammonia Anhydrous Liquor		1,237	**1,237**	13.5M Bimo Free on Rail O		341	**341**
Anthracite EOHP		3,613	**3,613**	Ammonia Anhydrous Liquor		42,049	**42,049**
Asbestos Crude		217	**217**	Ammonium Nitrate		26,148	**26,148**
Bauxite (Aluminium Clay)		835	**835**	Ammonia Sulphate EOHP		10,194	**10,194**
Caustic Soda EOHP		58	**58**	Aviation Turbine Fuel T/W		11,502	**11,502**
Cement Ordinary	127,644		**127,644**	Caustic Sode Eohp		159,143	**159,143**
Cement Ordinary in T/Wagon	44,650		**44,650**	Chemicals in T/Wagons		78,184	**78,184**
Chemicals in T/Wagons		18,694	**18,694**	Chrome Ore Sand Crude Exp		2,080	**2,080**
Coal EOHP	15,307		**15,307**	Coke Eohp		31	**31**
Coke EOHP		213,550	**213,550**	Diesel Fuel Oil T/Wagons		203,044	**203,044**
Diesel Fuel Oil T/Wagons	14,746	1,864	**16,610**	Dolomite in open bogie Wagon		490,243	**490,243**
Dolomite in open Bogie Wagon		6,503	**6,503**	Empty Cont for NWB/NQB		422	**422**
Earth Etc Crude	88		**88**	Ferro Manganese Silicon		324,422	**324,422**
Fertilizer EOHP		9,323	**9,323**	Fertiliser Eohp		67,649	**67,649**
Fertilizer in Liquid For/		268	**268**	Fly Ash in Tank Wagons		311,681	**311,681**
Gas in Tank Wagons	2,183	25,488	**27,671**	Gas in tank wagons		231	**231**
Hardware Eohp	110	120	**230**	Glass Broken		262	**262**
Hydrochloric Acid in T/WA		41	**41**	Grain and products		4,118	**4,118**
Illuminating Paraffin T/W		70	**70**	Hardware EOHP	110	120	**230**
Infrastructure (Stone)	21,451	13,961	**35,412**	Heavy CX Containers Road	158		**158**
Iron or steel	261	82,615	**82,876**	Hydrochloric Acid in T/Wag		10,784	**10,784**
Iron/pig sponge	1,047	16,144	**17,191**	Illuminating paraffin T/W		5,853	**5,853**
Light CX containers road	849		**849**	Infrastructure (Stone)	12,308	1,886	**14,194**
Lime EOHP in T Trucks		148	**148**	Iron or Steel		94,403	**94,403**
Lime Hydrated T Wagons		83	**83**	Light CX Containers Road	1,400		**1,400**
Lime Unslated Hydrated LO		282,807	**282,807**	Limestone poweder Bot Dis W		155,684	**155,684**
Limestone Bag/Loose open		3,547	**3,547**	Maize Loose	27,120	2,732	**29,852**
Magnesite		12,436	**12,436**	Metal Scrap	5,342	212	**5,554**
Machines Etc (not motor v	15		**15**	Metal Scrap		5,017	**5,017**
Manganese Crude Export		-1,032	**-1,032**	Methanol in T/Wagons		16,054	**16,054**
Manganese Crude Dioxide E		357,799	**357,799**	Oil Eohp		1,892	**1,892**
Manganese Sintered		594,392	**594,392**	Oil Furnache in T/Wagons		14,878	**14,878**
Maize Loose		34,821	**34,821**	ORS	14	99	**113**
Metal Scrap	4,465	33,934	**38,399**	Overmass Cont Road Transp	28		**28**
Molasses in T/Wagons		-60	**-60**	Overmass CX Containers Road	45		**45**
Oil lubricating in T Truc	160		**160**	P12M Cont Heavy >24T<294		2,781	**2,781**
ORS	97	428	**525**	P12M Cont Light >1KG<243		9,787	**9,787**
Other gases and mixtures		20,251	**20,251**	P12M Cont Overmass >29401		115	**115**
Overmass CX Containers Ro	23		**23**	P6M Cont Dangerous Goods		67,168	**67,168**
P6M Cont Dangerous Goods		843	**843**	P6M Cont Exp D Goods		148	**148**
P6M Cont Heavy >12.5t<22		303	**303**	P6M Cont Exp Heavy >12.5T		279	**279**
P6M Cont Light >1KG<1249		180	**180**	P6M Cont Exp Light >1KG<		36	**36**
P6M O Mass >22001KG		25	**25**	P6M Cont Heavy >12.5T<22		73,504	**73,504**
P12M Cont Light >1kg<243		72	**72**	P6M Cont Light >1KG<1249		2,534	**2,534**
Petroleum Coke		35,661	**35,661**	P6M Cont O Mass >22001KG		23	**23**
Phosphate Rock		30,519	**30,519**	Paraffin powder T/Wagons		574	**574**
Phosphoric Acid or paste		67,467	**67,467**	Pesticides in tank trucks		756	**756**
Priv. rolling stock (Haula	85		**85**	Petrol in T/Wagons		81,000	**81,000**
Railway Material	7,084	12	**7,096**	Petrol unleaded in T/Wagons		69,918	**69,918**
Rutile Sand	176		**176**	Phosphate Rock		1,042	**1,042**
S3M Cont Light >1KG<9000	1	64	**65**	Railway Material	6,867	24	**6,891**
S6M Cont Light >1KG<1249	9		**9**	Rec Full Empty Return (Con	642		**642**
S3M Cont Dangerous Goods		8	**8**	S3M Cont Dangerous Goods		17	**17**
S6M Cont Heavy >12.5T<22		62	**62**	S6M Cont Bulk		7,058	**7,058**
Salt		78,298	**78,298**	S6M Cont Heavy >12.5T<22		6,724	**6,724**
Service Execution	538	5	**543**	S6M Cont Heavy >1KG<1249		9	**9**
Silica	88	97,771	**97,859**	Salt		783	**783**
Sulphuric Acid		28,967	**28,967**	Service Execution	4,146	117	**4,263**
Tar acid mixture crude		67,825	**67,825**	Sulphuric Acid		766	**766**
Traction	4,254	74	**4,328**	Sunflower Seed	1,653		**1,653**
Wagons	5,848		**5,848**	Tar acid mixture crude		5,831	**5,831**
TOTAL	**251,179**	**2,142,311**	**2,393,490**	Toys Etc	1,530		**1,530**
				Traction	2,446		**2,446**
				Waste by-products		22,320	**22,320**
				Wax		483	**483**
				Wheat Loose EOHP	19,315		**19,315**
				Wood Saw Timber	10		**10**
				TOTAL	**83,134**	**2,395,155**	**2,478,289**

Annual Tons Received and Forwarded by Line Sector
Table 7 – Germiston-India-Crown-Langlaagte

Germiston-India-Crown-Langlaagte					
Received Traffic	**Annual Tons**		**Forwarded Traffic**	**Annual Tons**	
Commodity	**Krugersdorp**	**Total**	**Commodity**	**Krugersdorp**	**Total**
Barley EOHP	200	200	Earth Etc Crude	3,800	3,800
Diesel Fuel Oil T/Wagons	8,858	8,858	Foodstuffs and beverages	34	34
Earth ETC Crude	7,906	7,906	Hardware EOHP	100	100
Empty Containers For NWB/	4	4	Infrastructure (stone)	4,819	4,819
Hardware EOHP	180	180	Metal Scrap	20,675	20,675
Illuminating Paraffin T/W	7,435	7,435	ORS	34	34
Infrastructure (stone)	5,745	5,745	Petrol unleaded in T/Wagon	36	36
Kiesel Guhr (Diatomaceous earth)	40	40	Railway Material	140	140
Molasses in Tenkers-Swazil	19,844	19,844	Service Execution	264	264
Molasses in T/Wagons	32,405	32,405	Special & Amusementpark TR	2,670	2,670
Petrol unleaded in T/Wagon	23,968	23,968	Traction	40	40
Railway Material	10	10	**TOTAL**	**32,612**	**32,612**
S3M Cont Light >1KG<9000	6	6			
S3M Cont Overmass >9001KG	10	10			
Service Execution	188	188			
Sleepers and beams concrete	63	63			
Special & Amusement park TR	1,705	1,705			
Toys Etc	2,490	2,490			
Traction	40	40			
TOTAL	**111,097**	**111,097**			

Annual Tons Received and Forwarded by Line Sector
Table 8 – Langlaagte-New Canada-Midway-Vereeniging

LANGLAAGTE-NEW CANADA-MIDWAY-VEREENIGING

Received Traffic	Annual Tons		
Commodity	**Vereeniging**	**Krugersdorp**	**Total**
Ammonium Nitrate	15		15
Anthracite EOHP	16,664		16,664
Barley EOHP		200	200
Bauxite (Aluminium Clay)	835		835
Blocks EOHP	4,423		4,423
Bran Oats Etc	35		35
Bricks not palletised	266		266
Coke EOHP	3,212,634		3,212,634
Diesel Fuel Oil T/Wagons	3,846	8,858	12,704
Dolomite in open Bogie Wagons	261,551		261,551
Earth Etc Crude		6,026	6,026
Empty Containers for NW/		4	4
Fertilizer EOHP	5,429		5,429
Fertilizer Organic Eohp	20		20
Hardware Eohp	60	180	240
Illuminating Paraffin T/W		7,435	7,435
Infrastructure (Stone)	11,437	7,648	19,085
Iron or steel	167,170		167,170
Iron Ore	5,028,291		5,028,291
Iron/pig sponge	106,355		106,355
Kiesel Guhr (Diatomaceous earth)		40	40
Lime Eohp in T Trucks	148		148
Lime Hydrated T Wagons	83		83
Lime unslake in BOT DIS W	225,999		225,999
Lime Unslated Hydrated LO	275,415		275,415
Limestone Bag/Loose open	247,345		247,345
Limestonepowder BOT DIS W	155,684		155,684
Magnesite	12,436		12,436
Maize Loose	179		179
Manganese Crude Dioxide E	25,220		25,220
Metal Scrap	74,231		74,231
Molasses in Tenkers-Swazil		19,844	19,844
Molasses in T/Wagons	-60	32,405	32,345
Motor selfpropelled vehicle		179	179
ORS	10,264		10,264
Petrol unleaded in T/Wagon		23,968	23,968
Potassium Chloride Etc	5,204		5,204
Railway Material		210	210
S3M Cont light >1kg<9000		6	6
S3M Cont Overmass >90001kg		10	10
Service Execution	50	188	238
Silica	3,004		3,004
Slag iron & Steel T/Wagon	1,259		1,259
Sleepers and beams concrete		63	63
Special & Amusementpark TR		1,705	1,705
Sulphuric Acid	2,586		2,586
Traction		40	40
Toys Etc	820	2,490	3,310
Wagons	294		294
Wheat Loose EOHP	179,617		179,617
Wire EOHP	1,460		1,460
TOTAL	**10,040,269**	**111,499**	**10,151,768**

Forwarded Traffic	Annual Tons		
Commodity	**Vereeniging**	**Krugersdorp**	**Total**
Bran Oats	166		**166**
Chrome Ore Sand Crude Exp	2,080		**2,080**
Coal EOHP	686		**686**
Coke EOHP	181,055		**181,055**
Coke Export	1,248		**1,248**
Earth Etc Crude		3,800	**3,800**
Foodstuffs and beverages		34	**34**
Hardware EOHP	663	100	**763**
Infrastructure (Stone)	2,237	5,529	**7,766**
Iron or Steel	1,117,982		**1,117,982**
Metal Scrap	19,298	20,675	**39,973**
Millscale	31,125		**31,125**
ORS	1,256	34	**1,290**
Petroleum Coke	43		**43**
Petroleum Unleaded in T/Wagon		36	**36**
Plastic Moulding Comp. ET	827		**827**
Railway Material		10	**10**
S3M Cont Light >1KG>9000	16		**16**
S3M Cont Overmass >9001kg	12		**12**
S6M Cont Heavy >12.5T<22	374		**374**
Service Execution	84	264	**348**
Slag Iron & Steel T/Wagon	14,441		**14,441**
Special & Amusementpark TR	245	2,670	**2,915**
Traction		40	**40**
Wagons	908		**908**
Wheat Loose EOHP	3,048		**3,048**
Wire EOHP	242		**242**
TOTAL	**1,378,036**	**33,192**	**1,411,228**

Annual Tons Received and Forwarded by Line Sector
Table 9 – Krugersdorp-Randfontein-Potchefst

KRUGERSDORP-RANDFONTEIN-POTCHEFSTOOM

Received Traffic	Annual Tons			**Forwarded Traffic**	**Annual Tons**		
Commodity	**Klerksdorp**	**Krugersdorp**	**Total**	**Commodity**	**Klerksdorp**	**Krugersdorp**	**Total**
Ammonia Anhydrous Liquor	11,274		11,274	13.5M Bimo free on rail o	119		**119**
Ammonium Sulphate EOHP	18,981	40	19,021	Ammonia Anhydrous Liquor	356		**356**
Ammunition	514		514	Barley EOHP		28,956	**28,956**
Barley EOHP		12,332	12,332	Chemicals		63	**63**
Beer Ind Ale & Stout	18,955		18,955	Diesel Fuel Oil T/Wagons		228	**228**
Bran Oats Etc		980	980	Explosives & Acc min 13T	199		**199**
Chemicals in T/Wagons		209	209	Fertilizer EOHP	10,045		**10,045**
Coal EOHP	9,704		9,704	Fertilizer in liquod for/	268		**268**
Diesel Fuel Oil T/Wagons		8,970	8,970	Hardware Eohp		300	**300**
Earth Etc Crude		1,320	1,320	Infrastructure (stone)	763	4,761	**5,524**
Explosives & Acc Min 13To	106		106	Maize Loose	1,752	4,754	**6,506**
Explosives and Acc Min 3T	190		190	Maize Loose Exp		2,025	**2,025**
Fertilizer Eohp	15,403		15,403	Maize in bags Exp		3,864	**3,864**
Fertilizer in Liquid for/	268		268	Meal and flour wheaten ET		37	**37**
Gas in tank wagons		2,249	2,249	Metal Scrap		340	**340**
Grain sorghum loose	14,961		14,961	Mining Timber		37	**37**
Hardware EOHP		200	200	Oil Cake Meal & Flour		14,711	**14,711**
Infrastructure (stone)	4,115	6,110	10,225	ORS	307		**307**
Iron or steel		2,057	2,057	P12M Cont Light >1KG<243	111		**111**
Kiesel Guhr(Diatomaceous earth)		330	330	P6M Cont Dangerous Goods	1,280		**1,280**
Lime EOHP in T Trucks		5,479	5,479	P6M Cont Light >1KG<1249	97		**97**
Limestone bag/loose open		344	344	P6M Cont Heavy >12.5T<22		43	**43**
Manganese Crude Dioxide E		15,847	15,847	Phosphoric Acid or paste	41		**41**
Maize Loose	1,496	324,743	326,239	Railway Material		68	**68**
Malt		16,926	16,926	Rec Full Empty Return (Con	14,340		**14,340**
Military Equipment	325		325	S3M Cont Light >1KG<9000		1,467	**1,467**
Mining Timber		21,578	21,578	S3M Cont Overmass >9001KG		793	**793**
Molasses can soluble in T/W		818	818	S6M Cont Heavy >12.5T<22		21	**21**
Oil, cake meal & flour		1,551	1,551	Service Execution		259	**259**
Oil Eohp		18	18	Stockfeed and stock licks		2,832	**2,832**
Oil Lubricating in T Truck		19	19	Sulphuric Acid	6,794		**6,794**
ORS	63		63	Traction	20	425	**445**
P6M Cont Dangerous Goods	62		62	Wheat Loose EOHP	2,422	2,330	**4,752**
Phosphate Rock	160,806		160,806	**TOTAL**	**38,914**	**68,314**	**107,228**
Phosphoric Acid or paste	2,626		2,626				
Potassium Chloride Etc	10,710		10,710				
Railway Material	30	56	86				
S3M Cont Light >1KG<9000	10		10				
S6M Cont Light >1KG<1249	13		13				
Salt	748	176	924				
Service Execution		95	95				
Slag Iron or Steel		151	151				
Sulphur and sulphur powder	4,446	125	4,571				
Sulphuric Acid		396	396				
Sunflower seed		946	946				
Traction		190	190				
Urea EOHP	7,209		7,209				
Wheat Loose EOHP	1,775	210,079	211,854				
Wood Chips		106	106				
TOTAL	**284,790**	**634,440**	**919,230**				

Annual Tons Received and Forwarded by Line Sector
Table 10 – Krugersdorp-Zeerust-Mafikeng

KRUGERSDORP-ZEERUST-MAFIKENG					
Received Traffic	**Annual**	**Tons**	**Forwarded Traffic**		**Tons**
Commodity	**Krugersdorp**	**Total**	**Commodity**	**Krugersdorp**	**Total**
13.5M Bimo free on rail	136	136	Clement Clinker	15,651	15,651
Beer ind. Ale & Stout	55,096	55,096	Cement Ordinary	229,856	229,856
Coal EOHP	183,574	183,574	Cement Ordinary in T/Wagon	196,014	196,014
Diesel Fuel Oil T/Wagons	10,588	10,588	Chrome Ore Sand Crude Exp	15,944	15,944
Empty Containers for NWB/	1	1	Diesel Fuel Oil T/Wagons	158,874	158,874
Gas in Tank Wagons	3,880	3,880	Glass Broken	94	94
Gypsum EOHP	35,437	35,437	Hardware EOHP	60	60
Hardware EOHP	140	140	Infrastructure (Stone)	11,058	11,058
Illuminating Paraffin T/W	253	253	Maize Loose	26,412	26,412
Infrastructure (stone)	24,165	24,165	Maize Loose Exp	9,388	9,388
Iron or steel	597	597	Meal and Flour Wheaten ET	37	37
Kiesel Guhr(Diatomaceous earth)	330	330	Metal Scrap	340	340
Machines Etc (Not motor vehicles)	120	120	ORS	997	997
Maize Loose	264	264	P6M Cont Heavy >12.5T<22	18	18
Malt	16,926	16,926	Petrol in T/Wagons	120,546	120,546
Manganese Crude Dioxide E	15,847	15,847	Petrol unleaded in T/Wagons	73,176	73,176
Metal Scrap	8	8	Railway Material	783	783
Oil EOHP	18	18	Rapid Hardening Cement T/	1,284	1,284
Oil Lubricating in T Truck	19	19	S3M Cont Light >1KG<9000	8	8
ORS	991	991	S6M Cont Heavy >12.5T<22	18	18
P12M Cont Heavy >24T<294	99	99	S6M Cont Light >1KG<1249	4	4
Pp12m Cont Light >1KG<243	1,247	1,247	Service Execution	317	317
P12M Cont Overmass >29401	86	86	Traction	425	425
P6M Cont Heavy >12.5T<22	78	78	Wagons	148	148
P6M Cont Light >1KG<1249	198	198	Wheat Loose EOHP	5,588	5,588
P6M Cont O Mass >22001KG	22	22	Wheat Loose Export	789	789
Petrol in T/Wagons	83	83	**TOTAL**	**867,829**	**867,829**
Railway Material	94	94			
Rec Full Empty Return (Con	162	162			
S3M Cont Light >1KG<9000	23	23			
S6M Cont Heavy >12.5T<22	31	31			
S6M Cont Light >1KG<1249	158	158			
S6M Dangerous goods - Cont	26	26			
Service Execution	141	141			
Slag Iron or Steel	151	151			
Sulphur and Sulphur Powder	125	125			
Traction	215	215			
Wagons	24	24			
Wheat in bags	1,494	1,494			
Wheat loose EOHP	139,346	139,346			
TOTAL	**492,193**	**492,193**			

Annual Tons Received and Forwarded by Line Sector
Table 11 – Pretoria North-Rustenburg-Thabazimbi-Ellisras

PRETORIA NORTH-RUSTENBURG-THABAZIMBI-ELLISRAS

Received Traffic	Annual	Tons		Forwarded Traffic	Annual	Tons	
Commodity	Pretoria	Rustenburg	Total	Commodity	Pretoria	Rustenburg	Total
Ammonia Anhydrous Liquor		8,204	8,204	Andalusite		46,827	46,827
Andalusite		601	601	Beans Etc		986	986
Infrastructure (Stone)	460	14,844	15,304	Beer Ind Ale & Stout	273,091		273,091
Bark EOHP	80		80	Chrome Ore and Sand		455,358	455,358
Bran Oats Etc		61	61	Chrome Ore Sand Crude Exp		383,717	383,717
Caustic Soda EOHP		52,252	52,252	Coal EOHP		2,333,863	2,333,863
Coal Eohp		232,377	232,377	Coal Export for stacks		771,333	771,333
Coke Eohp		2,257	2,257	Diesel Fuel Oil T/Wagons		719	719
Diesel Fuel Oil T/Wagons		3,053	3,053	Explosives & Acc min 13TO		18	18
Earth Etc Crude	2,720	10,720	13,440	Explosives & Acc min 13TO		10	10
Granite or granite chips		471	471	Ferrochrome		818,029	818,029
Hardware EOHP		50	50	Glass Broken		812	812
Illuminating Paraffin T/W		9,897	9,897	Granite or granite chips		398,854	398,854
Iron /pig sponge		85	85	Hardware EOHP		50	50
Iron or Steel	2,236	1,184	3,420	Illuminating Paraffin T/W		370	370
Malt	56,974		56,974	Infrastructure (Stone)	302	3,348	3,650
Maize Loose		7,876	7,876	Iron Ore		2,619,244	2,619,244
Metal Scrap	44		44	Maize Loose		264	264
Mining Timber		14,467	14,467	Maize Loose Exp		308	308
Molasses can solublen T/W		876	876	Malt	974		974
Molasses in T/Wagons		106	106	Mining Timber		35	35
Motor Selfpropelled vehicle	10,215		10,215	Molasses can solublen t/w		9	9
Oil cake meal & flour		774	774	Motor Selfpropelled vehicle	46,655		46,655
Oil furnache in T/Wagons		3,893	3,893	ORS		136	136
ORS		105	105	P12M Cont Light >1KG<243	959		959
P6M Cont Dangerous Goods		33	33	P6M Cont Light >1KG<1249	163		163
P12M Cont Dangerous Goods	95		95	P6M Cont Heavy >12.5T<22		2,160	2,160
P12M Cont Light >1KG<243	2,844		2,844	Railway Material	68		68
P6M Cont Heavy >12.5T<22	152		152	S3M Cont light >1KG<9000		8	8
P6M Cont Light >1KG<1249	93		93	S6M Cont Heavy >12.5<22		3,240	3,240
Petrol unleaded in T/Wagon		31,271	31,271	Service Execution		30	30
Phosphate Rock		143,675	143,675	Special & Amusementpark TR		800	800
Phosphoric Acid or paste		1,620	1,620	Traction		110	110
Pulpwood (Hard wood)		39	39	Wagons		180	180
Rec Full Empty Return (Con)	142,976		142,976	Wheat in bags for export		660	660
Roundwood Etc	26,042		26,042	Wheat Loose EOHP		19,615	19,615
Service Execution		236	236	**TOTAL**	**322,212**	**7,861,093**	**8,183,305**
Special & Amusementpark TR		800	800				
Sulphuric Acid		24,462	24,462				
Traction		209	209				
Wagons		454	454				
TOTAL	**244,931**	**566,952**	**811,883**				

Annual Tons Received and Forwarded by Line Sector
Table 12 – Summary of All Line sectors in Gauteng

No.	Line Sector	Annual Tons Received	Forwarded	Total
		Tons	Tons	Tons
1	Germiston-Pretoria	3,092,520	236,736	3,329,256
	Pretoria - Pietersburg	1,566,068	324,561	1,890,629
	Pietersburg - Beit Bridge	1,032,785	886,844	5,219,885
2	Pretoria - Witbank	298,226	681,964	980,190
	Witbank - Nelspruit	5,438,693	4,618,975	10,057,668
	Nelspruit - Komatipoort	1,835,682	823,527	2,659,209
3	Apex - Welgedag	0	0	0
	Welgedag - Ogies	49,140	16,307,143	16,356,283
	Ogies - Witbank	1,383,692	988,824	2,372,516
	Krugersdorp - Johannesburg	737,965	42,262	780,227
4	Johannesburg - Germiston	0	0	0
	Germiston - Springs	522,871	60,899	583,770
	Springs - Bethal	337,513	5,133,986	5,471,499
5	Bethal - Breyten	1,488	0	1,488
	Union-Vereniging	2,142,311	2,395,155	4,537,466
6	Vereeniging - Bloemfontein	251,179	83,134	334,313
	Germiston - India	0	0	0
7	India - Crown	0	0	0
	Crown-Langlaagte	111,097	32,612	143,709
	Langlaagte - New Canada	111,499	33,192	144,691
8	New Canada - Midway	0	0	0
	Midway - Vereeniging	10,040,269	1,378,036	11,418,305
	Krugersdorp - Randfontein	634,440	68,314	702,754
9	Randfontein - Potchefstroom	284,790	38,914	323,704
	Krugersdorp - Zeerust	492,193	867,829	1,360,022
10	Zeerust - Mafikeng	0	0	0
11	Pretoria North - Rustenburg	244,931	3,221,212	3,466,143
	Rustenburg - Thabazimbi	566,952	7,861,093	8,428,045
	Thabazimbi - Ellisras	0	0	0

NB: Tonnage refers to goods received and forwarded so that the total of all sectors does not equal total tons on sectors, due to transit (bridge) traffic on lines.

APPENDIX B

APPENDIX B - Gauteng Rail Freight Annual Tonnage by Commodity

Commodity	Fwd Tons	Received Tons	Intrastate Tons	Bridge Tons	Total Tons	Details [Origins & Destinations]
Coal, Minerals, Processed minerals, Ores and Non-metallic base minerals						
Ammonia Anhyd Liq / Sol	26,067	28,413	146,402	27,069	**227,951**	Bell, Kim, New, Krn, Beth, Nam, Wit, Klk, PE, Zim
Ammonium Nitr.	43,413		15		**43,428**	Dbn, Kim, Pol
Ammonium Sul. EOHP	5,737		4,458	16,415	**26,610**	Klk, Zim via Springs
Andalusite				64,545	**64,545**	
Anthracite EOHP		22,889		90,041	**112,930**	
Antimony Ox. EOHP						
Asbestos Crude	110	27,614		36	**27,760**	Zim
Bauxite (Alum. Clay)		2,383			**2,383**	Dbn
Benotite in open wagons	40				**40**	Zim
Chrome Ore Sand	18,024			455,383	**473,407**	Dbn, RB
Chrome Ore Sand Crude Exp				453,517	**453,517**	
Coal	685				**685**	Pol
Coal EOHP		6,237,786	1,911	3,515,629	**9,755,326**	Ellisras
Coal, degassed (Char)				14,223	**14,223**	
Coal exports for stacks				832,626	**832,626**	Ellisras – RB
Coke EOHP	210,411	68,096	120	105,128	**383,755**	Dbn, Kim
Coke Exported	1,327				**1,327**	
Coal Exp for dir. Shipment				968,559	**968,559**	
Copper Crude Concentrate				1,179	**1,179**	
Copper Nickel Matte				117,824	**117,824**	
Caustic Soda EOHP	159,125			5,828	**164,953**	Bell, Dbn, PE, Spr, Rust, Worc, Zim
Dolomite in open wagons	658,285	6,500	255,039	1,026	**920,850**	Wit, New, Bel
Earth, etc., crude	11,059	6,026	18,408	359	**35,852**	Bfx, Ogies, Rust, Klk
Ferrochrome			811,422	831,727	**1,643,149**	Rust
Ferro Manganese Silicon	324,438			4,227	**328,665**	Dbn, Bell, EL, DRC, RB
Fluospar	101,172	273		139,251	**240,696**	Dbn, Sald. Wit
Granite & Gr. Chips	102	1,090		445,396	**446,588**	RB, Rust, Dbn, Zim

Gypsum (EOHP)	15,199	49,159		109,937	**174,295**	Pmb, RB, Moz
Infrastructure (Stone)	41,111	44,246	15,281	65897.00	**166,535**	Sundry
Ingots – Aluminum				520	**520**	
Ingots – Lead/Zinc				219	**219**	
Iron Ore		5,744,452		2,652,505	**8,396,957**	NCvia Kim,Thaba,Ncstle
Kaolin crude		172			**172**	PE
Kiesel Guhr (diatom-earth)		370			**370**	Moz
Manganese Sintered		594,403		105,692	**700,095**	No C via Kim
Manganese Cr. Diox		399,863		819,739	**1,219,602**	No C via Kim
Manganese Crude Exp.		-1,033			**-1,033**	
Magnesite		14,388			**14,388**	Dbn
Nickel Sul. Hyd.	2,560				**2,560**	Zim
Petalite		438			**438**	Pol
Phosphate Rock	1,042	30,508		304,776	**336,326**	Rust
Pitch coke				5,501	**5,501**	
Rutle Sand	176				**176**	
Salt		79,907		20,601	**100,508**	Ogs, Bot, Sal
Silica	34,757	70,475	30,299	86,382	**221,913**	Bfx, Kim, New
Soduum Carb Bot		178,969			**178,969**	Sua Pan Botswana
Titanium Slag				63,728	**63,728**	
Vanadium Slag		40,845			**40,845**	Sua Pan Botswana
Zinc & Zinc Concentrate				206,020	**206,020**	
Heavy Manufacturing:						
Fuel and Petroleum						
Aviation gasoline in t/w		8856			**8856**	Dbn
Av. Turb fuel t/w	9,281	389,462	2,217	1,760	**402,720**	Pol, DRC,Dbn
Diesel in t/w	552,417	756	110,982	79,753	**743,908**	Bot, Wit, Pol, Spr, Og, Zim, Inc Spar
Paraffin Pow t/w	573				**573**	DRC
Petrol in t/w	369,703	167	35,914	55,553	**461,337**	Bot, Wit, Pol, Klk,Dbn Wit
Petrol Unleaded in t/w	204,897	7,768	14,087	36,462	**263,214**	Bot, Wit, Pol, Klk, Nel, Dbn Pol

Petroleum coke		35,665	43	2,052	**37,760**	Dbn
Liquids and Chemicals						
Chemicals in t/w	79,330	15,850	8,252	68,701	**172,133**	Dbn, Zim
Chemicals packed				479	**479**	
Chemicals	-44		63		**19**	New
Calcium Carbide EOHP		4,723		1,578	**6,301**	
Caustic Sode EOHP	125,142	58	31,226	57,682	**214,108**	Dbn, Bel,,Zim,Rus,EL,Wor
Ethanol in t/w					**0**	
Gas in t/w		323	29,248	18,812	**48,383**	Krn, Wor
Gas, other, in t/w		49,382			**49,382**	Dbn,RB
Other gases & mix EOHP						RB
Glkycerine EOHP		3,567			**3,567**	Dbn
Hyd. Acid in t/w	10,792	41			**10,833**	Dbn, Bell, PE, Zim
Ill. Paraffin in t/w	5,900	2,024	52,313	99,412	**159,649**	Dbn, Bot, Wit, Pol, Klk
Methanol in t/w	6,919		9,141	62	**16,122**	Dbn, New via Springs
Oil, EOHP		46	1,894		**1,940**	Via Springs
Oil furnace in t/w			608		**608**	Dbn PE
Oil lubricating		73		19	**92**	
Oil lub in t/w				991	**991**	
Oil Veg crude in t/w		1,579		7,234	**8,813**	Dbn
Pesticides in t/w	755				**755**	Zim
Phosphoric Acid or paste		67,470		119,926	**187,396**	Nel, RB
Potassium Chloride		5,204		11304	**16,508**	Dbn
Sulphur and Sulphur Pdr.			125	34,491	**34,616**	
Suphuric Acid	793	28,766	6,317	46,691	**82,567**	Rust, KLk, RB, Nel
Tar Acid Crude	5,832		67,824	3,491	**77,147**	Dbn, Wit via Springs
Wax				90	**90**	
Cement and Lime						
Cement (Ord)	232,144	15,840		74,846	**322,830**	Bot, Zim, PE Klk
Cement (Ord) in t/w				447,248	**447,248**	
Cement (Bulk) in t/w	151,671	340,082	41,757		**533,510**	Bot, Klk
Cement (Fibre reinf.)				704	**704**	

Cement (Refractory)	133				**133**	Zim
Cement (Rapid Hard.)	1,284	4,665		2,515	**8,464**	New
Cement (Clinker)	15,652	502,273		47,896	**565,821**	Dbn , NC via Kim
Cement (Bag shrink wrap)		477,575		152,418	**629,993**	
Fly Ash in t/w	311,603	40			**311,643**	Klk
Lime in bags				350	**350**	
Lime EOHP in t/w				17,767	**17,767**	
Lime (Unslated hydr loose)	18,857	284,270		304,003	**607,130**	RB, Pmb NC via Kim
Lime in bot. dsch. Wagons		244,654	39	37,925	**282,618**	No C via Kim
Limestone Open wagon		781,508		402470	**1,183,978**	No C via Kim & Rust
Limestone powder bot disc		29,053	155787	30679	**215,519**	No C via Kim
Fertiliser						
Fertiliser EOHP		14,762		23095	**37,857**	Rust, Dbn, Klk, RB, Pmb ,Ogies
Fert. Org. EOHP		20			**20**	Ogies
Fert. In liquid form t/w		298	587	268	**1,153**	Klk, Bell via Springs
Urea Eohp				4,797	**4,797**	
Iron, Steel and Scrap						
Iron or Steel	1,059,573	269,485	69,417	14,770	**1,413,245**	Dbn, Bell, RB, EL, Krn, PE, Zimb, Bot, DRC
Iron Pig. Sponge	9,395	81,076		171	**90,642**	New
Iron, Slag in t/w	14,428				**14,428**	EL
Metal Scrap	186	45,635	85,657	84,226	**215,704**	
Millscale			31,127		**31,127**	Trichart-Sasolburg
Slag iron or steel		151		3,456	**3,607**	Zim
Slag iron & steel in t/w		1,260			**1,260**	New
Wire EOHP	3,519		1,459		**4,978**	EL,RB
Agricultural commodities, Grain, Stockfeed and Milling						
Barley EOHP	26,186	8,032	28,957	16,406	**79,581**	Kmb, Bell, Wor Klk, Bel
Beans, etc.		1,220		11,567	**12,787**	Dbn
Bran Oats, etc.	5,106	1,908	361	331	**7,706**	Klk, Rust, Moz,Nel
Fat EOHP				742	**742**	
Fruit, Citrus				109,779	**109,779**	

Grain & Products	28,629	22		812	**29,463**	Bel
Grain Sorghum		308	44	33,133	**33,485**	Krn
Maize loose	67,595	777,769	15,224	615,064	**1,475,652**	Sundry
Maize Loose Exp				177,111	**177,111**	
Maize in bags			97,237		**97,237**	
Maize in b. exp	3,865			55,011	**58,876**	Zim
Malt	993	121,837	1,680	17,065	**141,575**	Dbn, Pol, PE, Bel
Meal & Flour Patato, etc				-66	**-66**	
Meal & Flour Wh	111	220			**331**	DRC,Krn
Meal, Flour & Maize				2,805	**2,805**	
Meal Flour Bean Pea Le				9,592	**9,592**	
Molasses in t/w		134,770	1,025	12,188	**147,983**	
Molasses Can Sol t/w		6,522	1,741	9,305	**17,568**	
Oil Cake M & F	11,805	7,572	15,608	9,026	**44,011**	Dbn
Oil Veg. crude in t/w	-1	3,408			**3,407**	Dbn,Pbm
Palm Sterin				114	**114**	
Rice Raw EOHP				11,048	**11,048**	
Stockfeed & St licks's		452	177	18,067	**18,696**	
Stockfeed, Lucerne		352			**352**	Ogies
Sugar loose		61,876		36	**61,912**	Jagbaan via Pmb
Sugar, packed				21,822	**21,822**	
Sunflower seed		12,146	1,277	3,827	**17,250**	Klk,Bfx,Beth,Krn
Sunflower oil, ma. Germ						
Wheat loose exp	789			31,955	**32,744**	Bot, Zim
Wheat loose EOHP		561,489	73,426	114,548	**749,463**	Kim, Rust, Ogs, Dbn, Klk, Spr, Pol, Krn, Bell, Bfx, Wor, Moz
Wheat in bags		1,846		112	**1,958**	Dbn
Wheat in bags for export				3,058	**3,058**	
Intermodal Wholesale and Automotive						
Containers – 3m	12,328	2,148	211	11,776	**26,463**	Sundry
Containers – 6m	937,348	939,134	2,856	658,853	**2,538,191**	Sundry

Containers – 12m		454,506	208	84,318	**539,032**	
Cont. – 13.5m		28,537	228	5,727	**34,492**	Dbn,Bel,Bot,PE,Zim
Cont. via road		1,035	20,048	389	**21,472**	Nel,PE,Zim
Cont. not plastic steel				154	**154**	
Mini container por		2,743			**2,743**	Dbn,Bel,Nel,PE,EL,Bot
Motor self p. veh		107,739		1,041	**108,780**	
Veh & Motorcycle parts				3,658	**3,658**	
Timber, Paper and Publishing						
Bark EOHP		2,320			**2,320**	RB
Mining timber		86,917		143,948	**230,865**	
Paper Reels for Newsp	36			81	**117**	DRC
Paper Reels for cbd. Bxs				122,309	**122,309**	
Paper Reels Sugar C. b's				6,205	**6,205**	
Pulpwood (H/W)		16,548		75,507	**92,055**	Wit,Nel
Pulpwood (Softwood)				2,386	**2,386**	
Roundwood, etc.		26,042		70	**26,112**	
Wooden poles				16,485	**16,485**	
Wood chips		1,892		3,310	**5,202**	Pol
Woodpulp bleach.		1,531		71,075	**72,606**	
Woodpulp unbl.(all wag.)		13,913			**13,913**	Nel
Wood & pw. Art.		46		345	**391**	Moz
Wood saw timber		1,072		7,878	**8,950**	Nel
Fast Moving Goods, Other						
Ammunition		11		209	**220**	
Bags EOHP				74	**74**	
Beer, Ale, Stout			55,097		**55,097**	EL
Blocks EOHP	30	4,423			**4,453**	Pol
Boards / Sheets				23	**23**	
Bricks not palletized		266		1,530	**1,796**	Zim
Cardboard boxes EOHP	22				**22**	DRC
Cathodes (Copper)				7,602	**7,602**	
Electric appliances /art	48				**48**	Bet, DRC

Electrode paste/p/b				498	**498**	
Explosives various	1,154			29	**1,183**	Bot,Pol,New,RB,Nam
Fish				485	**485**	
Foodstufs and bev.	754			1,957	**2,711**	DRC
Glass, Broken		9,729	483		**10,212**	
Hardware EOHP	742	458	1,390	260	**2,850**	Dbn,Wit,Kim,Ogs
Liquor Alc. t/w		3,528	58	19,223	**22,809**	
Machines etc (not MV)	15	120			**135**	Bfx
Memorials or tombstones	94				**94**	Krn
Military Equipmt	1,109	738		1,170	**3,017**	Dbn,Kim
ORS	3,927	11,168	1,270	1,834	**18,199**	Sundry
Ornaments				541	**541**	
Paper articles/other pap.	119			180	**299**	DRC
Pipes, piped fittings EOHP	2				**2**	DRC
Plastic Moulding comp.			828		**828**	Via Springs
Priv. roll stock haulage				20	**20**	Krn
Railway Material		8,975	6,775	7,673	**23,423**	
Rec. full empty ret contract		89,520	53,593		**143,113**	
Service Execution	1,018	2,712	375	2,504	**6,609**	Sundry
Sleepers, beams concrete			179	2,823	**3,002**	Moz
Sleepers, wooden		72			**72**	
Soap	40				**40**	Moz
Special & Amus Park train	800	840	2,735	800	**5,175**	Rus
Textile Waste				528	**528**	
Toys, etc.		2,700	1,620		**4,320**	Bfx,Nel
Traction	5,700	4,904	3,194	3,142	**16,940**	Sundry
Vessels wag. Rtc	10	48			**58**	PE
Wagons	3,657	7,151	350	2,427	**13,585**	Sundry
Water				90		
Waste by-products	30				**30**	Zim,
GRAND TOTAL	**5,959,636**	**20,897,894**	**2,427,694**	**17,383,247**	**46,668,381**	

APPENDIX C

APPENDIX C

Support and Service Providing Companies (in 2004)

African Rail & Traction Services: a division of Surtees (Johannesburg)
A company that supplies various railway components and provides operations and maintenance support for a number of companies having sizeable private railway systems.

Alstom (Germiston South)
A large international supplier of railway rolling stock, locomotives and specialised equipment. Alstom has been a dominant supplier of electric traction equipment for locomotives and coaches in South Africa.

It is a major role player in the high-speed passenger train sector. A member of the European consortium which supplied 7E heavy haul locomotives for the Richards Bay coal line and other 25 kV systems such as the lines running north from Pyramid South.

BG Locomotive Services (Boksburg East)
A company in Boksburg East specialising in the supply of equipment and services to private sector industrial rail operators.

Infraset: a division of Grinaker-LTA (Brakpan)
A major producer of concrete railway sleepers, having a large factory at Vulcania in Brakpan. Infraset employees approximately 900 people at a number of manufacturing plants in Southern Africa.

Ingerop Africa (Rivonia)
Bergman Ingerop is a multidisciplinary consulting engineering firm, combining South African expertise with a latest French engineering technology and 30 years of international experience.

Jeffares & Green (Sunninghill)
Consulting engineers with a wealth of experience in major railway projects in Southern Africa.

Knorr-Amabhiliki (Kempton Park)
Supplier s of braking systems used on many locomotives in South Africa.

Lennings Rail Services (Dunswart)
A company specialising in rail track maintenance, supplying equipment and services to Spoornet and private sector rail operators. Undertakes contract work using track tamping and ballast profiling machines, ballast cleaning machines, and other equipment including rail grinding machines.

Ngolovan (Gardenview)
A company with management having railway expertise of more than 40 years. Together with its overseas Principal's, Ngolovan manufactures and supplies air brake systems, trackside lubricators, brake blocks, slack adjusters, hand brakes, drawgear and hydraulic tools.

Pandrol (Isando)
Supplier of Pandrol track clips, widely used to position rail on railway sleepers. Pandrol fastenings are used on any sleeper type, ranging from wood to steel and concrete.

Permatool (Gardenview)
The company has a factory/workshop in Elandsfontein, east of Johannesburg. It supplies of a broad range of railway construction and maintenance machinery as well as specialised tools.

R & H Railway Consultants (Randburg)
A consulting company specialising in main lines including heavy haul and high speed commuter systems. It undertakes various services for private railway systems serving mines and industrial complexes. The company also specialises in track maintenance and management, electrification and signalling systems.

Railquip (Benoni)

Ramco and Plasserail (Maraisburg)
An international company with a South African contracting division which specialises in rail track geometry measuring and maintenance services to Spoornet and private sector rail operators. A contract work specialist using track tamping and ballast profiling machines, ballast cleaning machines, rail profiling machines and other sophisticated equipment for normal and heavy haul operations.

Reef Rail (Pty) Ltd (Isando)

RSD: A division of Dorbyl Ltd. (Boksburg East)
A major manufacturer which specialises in the construction of railway wagons and locomotives. It is the official agent for General Electric locomotives, as well as Funky mining and industrial locomotives.

Sheltam (Port Elizabeth)
Supplier of operations experience, locomotives and wagon maintenance for a number of mining groups and more recently in countries to the north.

Siemens Traction (Halfway House)
A very large German country with over 75 year's service in South Africa. The company has supplied components used in many electric locomotives, has constructed Metro coaches and has an important signalling division.

Siyahamba Engineering (Pty) Ltd (Wadeville)

Thermitrex (Pty) Ltd (Dunswart)
A company specialising in the continuous welding of railway track using the "Thermit Welding" system. It gives technical advise to customers in all aspects of rail welding technology, rail joint and build-up welding, training of welding crews, field welding, organization and training.

Timken (Dunswart)
Supplier of tapered roller bearings for locomotive and wagon use. Provides support services and in particular, for the overhaul of bearings as an on-going exercise.

Tubular Track (Pretoria)
Specialist company which has developed the tubular track concrete-beam ballestless track system. This has been used in underground applications, for railway yards on heavy haul sections and more recently for railway turnouts.

Scaw Metals (Union, south of Germiston)
A large steel producer which specialises in railway castings for locomotive and wagon bogies, as well as producing wheel-sets and other specialised components for rail use.

SKF (Kempton Park)
A Swedish owned supplier of roller bearings which have been fitted to many Spoornet locomotives, wagons and passenger coaches.

Union Carriage & Wagon (Nigel: Vorsterkroon)
An important locomotive manufacturing and assembly company which has been associated with other companies such as GEC Traction of the UK, Hitachi and Toshiba of Japan. Is currently involved with the refurbishment and modernisation of 10M4 Metro train sets

VAE SA (Pty) Ltd (Isando)
A large international company specialising in the manufacture of railway turnouts and other track components.

Wictra Holdings (Germiston)
A BEE company which has leased a portion of the old Germiston Steam loco maintenance facility. It overhauls Metro passenger coaches and sub-contracts certain component renewals to large companies and Transwerk.

Zomba Construction (Pty) Ltd (Bedfordview)
A railway construction company specialising in contract work for Spoornet and Metrorail. The company carries out mechanized rail maintenance and owns and operates a variety of on-track maintenance machines. The company recently expanded its expertise into the field of pre-cast concrete sleeper and rail crossing slab manufacture.

APPENDIX D

APPENDIX D - Organisations Consulted

Company	Location	Ref
AE & CI	Modderfontein	117.10
Baldwin Steel	Isando	117.27
Billiton (Samancor)	Jhb. Head Office	116.10
BMW	Rosslyn	116.06
	Rosslyn	118.4
Bison Board	Boksburg East	117.25
Blue IQ	Johannesburg	117.21
	Rosslyn	116.14
Bokomo	Bon Accord	117.30
Botswana Ash	Alrode	117.13
Cross Country Carriers	City Deep	117.11
	Eastcon	118.3
BPB Gypsum	Brakpan (Vulcania S.	117.31
		117.11
	Eastcon	117.17
		117.09
Cullinan Refractories	Olifantsfontein	117.17
DAV Steel	Zonderwater	117.30
Ekurhuleni Metro	Germiston -Springs	116.54
Distillers	Wadeville	117.29
		117.23
Engen Pretroleum		
Isando	Kempton Park	116.56
Langlaagte	Johannesburg	116.56
Epol	Pretoria Ind.	117.13
Esselen Park (Transnet)	Esselen Park	117.13
	Esselen P	116.59
ERGO	Brakpan (Vulcania S.)	117.31
Everitt	Kliprivier	117.14
G & W Base		
Glen Douglas Dolomite	Henley-on-Klip	116.55
Godrich Flour Mills	Bronkhorstpruit	117.30
Hall & Longmore	Wadeville	117.27
Highveld Steel & Vanadium	Clewer	117.11
Holcim (Anglo Alpha Cement)	Jhb. Head Office	117.11
Iscor		116.7
		116.22
Kelvin Power Station	Johannesburg	117.11
LaFarge (Blue Circle)		116.7
Kumba Resources	Thabazimbi	116.55
		116.56

Lime Distributors	**Vereeniging**	**117.31**
Lion Match	**Rosslyn**	**116.6**
		118.7
MacPhail Coal	**Isando**	**117.27**
MacSteel	**Germiston**	**117.13**
MacSteel	**Wadeville**	**117.29**
Micor Rail		**117.10**
Nissan	**Rosslyn**	**116.6**
NCP Cloorkop	**Cloorkop**	**117.11**
		117.12
OTK		**116.73**
OTK Bronkhorsptuit	**Bronkhorsptuit**	**117.30**
PG Glass	**Springs (New Era)**	**117.31**
Premier Food	**Waltloo**	**116.18**
Pretoria Portland Cement		
Pretoria West Power Station	**Pretoria West**	**117.11**
Pride Milling	**Vosterkroon (Nigel)**	**116.73**
Ruta Mills	**Pretoria West**	**117.20**
SA Breweries (Alrode)	**Alrode**	
SA Breweries (Chamdor)	**Krugersdorp**	**117.27**
SA Breweries (Isando)	**Isando**	**117.27**
SA Breweries (Rosslyn)	**Rosslyn**	**116.6**
	Rosslyn	**118.5**
	Rosslyn	**118.2**
SA Breweries (Waltloo)	**Pretoria**	
SA Malsters	**Alrode**	
Sasko (Chamdor)	**Krugersdorp**	**117.27**
Scaw Metals	**Union (Germiston)**	**117.22**
		117.28/9
Samancor (Meyerton Smelter)	**Meyerton**	**116.10**
Samcor	**Waltloo**	**116.7**
SMX	**EkIndustria**	**117.30**
Spoornet : Customer Services	**Isando**	**117.23**
Spoornet: Customer Services	**Langlaagte**	**117.21**
Spoornet: Customer Services	**Krugersdorp**	**117.23**
Spoornet: Customer services	**Natalspruit**	**117.29**
Spoornet: Customer Services	**Pretoria**	**116.18**
	Durban	
Customer services	**Springs**	**117.31**
City Deep		
Eastcon	**Dunnottar**	**117.5**
Pretcon	**Pretoria**	**116.21**
Capital Park Loco Shed	**Pretoria**	
Germiston Loco Shed	**Germiston**	**117.8**
Germiston PCO Office	**Germiston**	**117.8**
Springs Chamber of Comm.	**Springs**	**116.54**

Transwerk	**Koedoespoort**	**117.20**
Germiston Wagon Shops	**Germiston**	**117.7**
Tswana Mills	**Hammanskraal**	**117.30**
Vereeniging Refractories		**117.2**
Vesuvius	**Olifantsfontein**	**117.17**
Union Steel (Iscor)		**117.2**
Viamax	**Johannesburg**	**117.10**
Ushers (Lasher Tools)	**Wadeville**	**117.29**
Wictra	**Germiston**	**116.57**
Xtratra	**Rustenburg**	**116.55**
Yeastpro (Anchor Yeast)	**Industria W.**	**117.16/21**
Zincor	**Struisbult**	**117.17/31**