



# LIMPOPO DEPARTMENT OF ROADS & TRANSPORT



## Development of a Freight Transport Implementation Strategy for Limpopo Province

**PROPOSED STRATEGY REPORT**

**October 2012**

**Final Draft**

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## List of Abbreviations and Acronyms

ABBREVIATION/ ACCRONYM	DESCRIPTION
<b>AAHDT</b>	Annual Average Heavy Daily Traffic
<b>AC</b>	Alternating Current
<b>ACSA</b>	Airports Company of South Africa
<b>AIDS</b>	Acquired immune deficiency syndrome
<b>ASLC</b>	Air Service Licensing Council
<b>ATNS</b>	Air Traffic and Navigation Services
<b>CBRTA</b>	Cross Border Road Transport Agency
<b>CSI</b>	Container Safety Initiative
<b>CTC</b>	Centralised Traffic Control
<b>DC</b>	Direct Current
<b>DEAT</b>	Department of Environmental Affairs and Tourism
<b>DM</b>	District Municipality
<b>DME</b>	Department of Minerals and Energy
<b>DOT</b>	Department of Transport
<b>DPE</b>	Department of Public Enterprises
<b>DTI</b>	Department of Trade and Industry
<b>EDI</b>	Electronic Data Interchange
<b>EPWP</b>	Expanded Public Works Programme
<b>FDI</b>	Foreign Direct Investment
<b>FESARTA</b>	Federation of East and Southern African Road Transport Associations
<b>FONA</b>	First Order Network Assessment
<b>GAAL</b>	Gateway Airport Authority Limited
<b>GDP</b>	Gross Domestic Product
<b>GDPR</b>	Gross Domestic Product Rate
<b>GEAR</b>	Growth Employment and Redistribution
<b>GIS</b>	Geographic Information Systems
<b>GVA</b>	Gross Value Added
<b>HA</b>	Hectare
<b>HIV</b>	Human Immunodeficiency Virus
<b>IATA</b>	International Air Transport Association
<b>ICAO</b>	International Civil Aviation Organisation
<b>IDP</b>	Integrated Development Plan
<b>IMS</b>	Integrated Manufacturing Strategy
<b>ISPS</b>	International Ships and Ports Security
<b>ITP</b>	Integrated Transport Plan
<b>KG</b>	Kilogram
<b>KZN</b>	KwaZulu-Natal
<b>LCC</b>	Load Control Centres
<b>LCN</b>	Load Classification Number
<b>LDoRT</b>	Limpopo Department of Roads and Transport
<b>LDVs</b>	Light Delivery Vehicles

<b>LEGDP</b>	Limpopo Employment Growth and Development Plan
<b>LSDF</b>	Limpopo Spatial Development Framework
<b>MEC</b>	Member of Executive Council
<b>MSA</b>	Moving South Africa
<b>NATMAP</b>	National Transport Master Plan
<b>NDA</b>	National Development Agency
<b>NDOT</b>	National Department of Transport
<b>NFLS</b>	National Freight Logistics Strategy
<b>NFMF</b>	National Freight Monitoring Framework
<b>NIP</b>	National Infrastructure Planning
<b>NLTA</b>	National Land Transport Act
<b>NLTS</b>	National Land Transport Strategy
<b>NLTSF</b>	National Land Transport Strategic Framework
<b>NLTTA</b>	National Land Transport Transition Act
<b>NRTA</b>	National Road Transport Act
<b>NSDP</b>	National Spatial Development Perspective
<b>ORTIA</b>	Oliver Tambo International Airport
<b>PGDS</b>	Provincial Growth and Development Strategy
<b>PIA</b>	Polokwane International Airport
<b>POLBs</b>	Provincial Licensing Board
<b>PRASA</b>	Passenger Rail Agency of South Africa
<b>RAL</b>	Roads Agency Limpopo
<b>RDP</b>	Reconstruction and Development Programme
<b>REG</b>	Regulation
<b>RSR</b>	Rail Safety Regulator
<b>RTMC</b>	Road Traffic Management Corporation
<b>RTQS</b>	Road Transport Quality System
<b>SAA</b>	South African Airways
<b>SAAFF</b>	South African Association of Freight Forwarders
<b>SACAA</b>	South African civil Aviation Authority
<b>SADC</b>	South African Development Community
<b>SANRAL</b>	South African National Roads Agency
<b>SAPS</b>	South African Police Services
<b>SARCC</b>	South African Rail Commuter Corporation
<b>SARS</b>	South African Revenue Services
<b>SDF</b>	Spatial Development Framework
<b>SDI</b>	Spatial Development Initiative
<b>SMME</b>	Small Medium Micro Enterprises
<b>SWOT</b>	Strengths Weaknesses Opportunities and Threats
<b>TCC</b>	Traffic Control Centre
<b>TNPA</b>	Transnet National Ports Authority
<b>TOR</b>	Terms Of Reference

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# Executive Summary

## Freight Strategy Context

As Limpopo's economy and population grows over the next decade or more, it is likely that so too will its demand for goods and its transport. The South African government advocates and accepts that there is a relationship between transport and economic growth. The Limpopo Province identified in their Growth and Development Strategy (GDS):

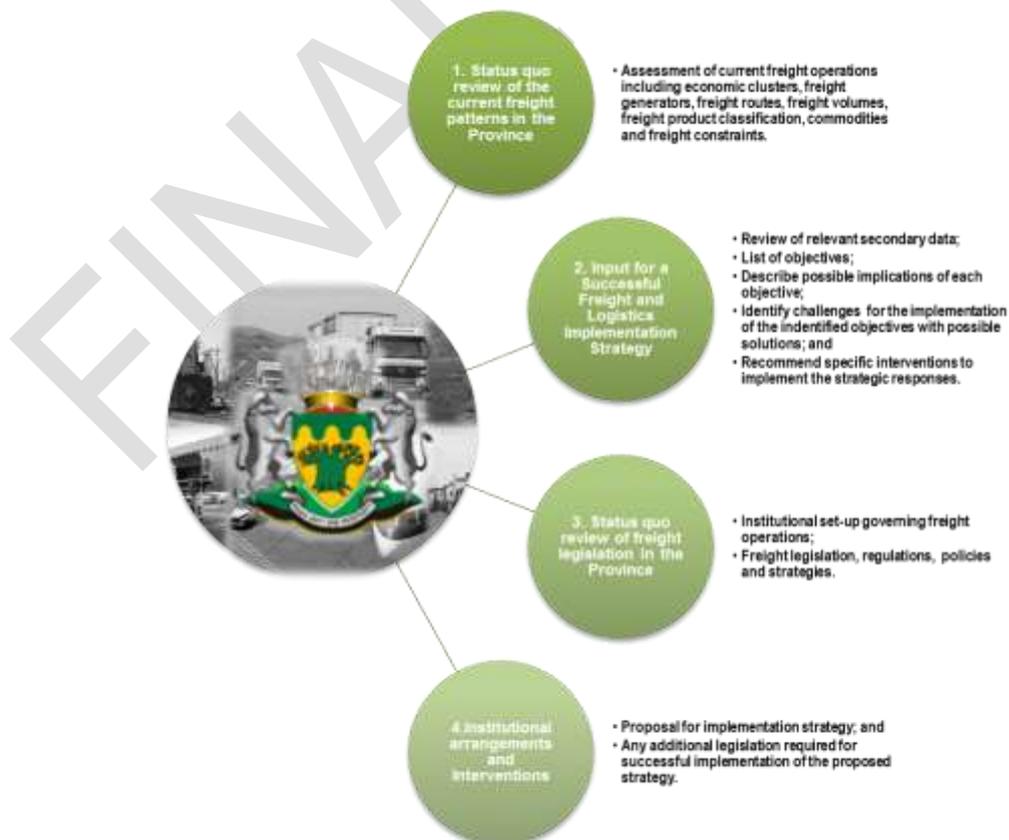
***"...transport as an enabler in facilitating economic growth and movement of people, and goods and services."***

A corridor analysis of the main freight was executed to determine freight movement patterns attained over the past five years from 2006 to 2011. The freight travel patterns in Limpopo Province have changed significantly over the past five years. Road has become the predominant mode for transporting a majority of commodities. This is primarily due to mode shift from rail to road due to closure of some of the rail lines/stations in the province that used handle freight commodities. Other evident reasons for the road mode preference are speed, convenience, security and lack of rail capacity to handle general freight. It can be considered therefore that currently road transport appears to be the most efficient and effective means of transporting freight.

Movement of freight by road has many unfavourable implications - road safety, harm to the environment and quality of life of the area could also be affected detrimentally. Responding to the freight challenges requires a comprehensive plan of action by the Limpopo Province – a comprehensive plan that complements overall Limpopo's planning framework.

## Summarised Freight Strategy Development Methodology

The development of the Limpopo Freight Transport Strategy followed the methodology as summarised in the diagram below.



## Current Freight Trends

The freight sector is a substantial economic activity in Limpopo. It generates and facilitates economic growth and employment, and accounts for a significant share of the provincial GDP. The main sources of data to determine the freight trends of the Province are the 2006 and 2011 freight databanks respectively.

The table below summarises the identified trends on freight corridors by comparing the two freight databanks. As can be seen overall taking into account all the corridors, there was a 32% increase in freight volumes over the 5 years.

2006 FREIGHT DATABANK CORRIDORS		AVERAGE FREIGHT VOLUMES (million tons per annum)	2011 FREIGHT DATABANK CORRIDORS		AVERAGE FREIGHT VOLUMES (million tons per annum)	TREND
1	N1 (North of Polokwane)	2.77	1	N1 (North of Polokwane)	2.62	-5.73%
	N1 (South of Polokwane)	3.18		N1 (South of Polokwane)	3.48	8.62%
2	N11 (Northwest of Mokopane)	1.28	2	N11 (Northwest of Mokopane)	4.21	69.60%
	N11 (Southeast of Mokopane)	1.38		N11 (Southeast of Mokopane)	1.52	9.21%
3	R33	1.47	3	R33	0.74	-98.65%
4	R71	1.62	4	R71	1.05	-54.29%
5	R37	0.41	5	R37	2.59	84.17%
6	R81	1.18	6	R81	1.23	4.07%
7	R521	0.58	7	R521	2.97	80.47%
<b>Total</b>		<b>13.87</b>	<b>Total</b>		<b>20.41</b>	<b>32.04%</b>

The table below summarises the freight trends on the rail corridors within the province by comparing the total freight volumes per annum for the 2006 and 2011 freight databanks respectively. Overall there was an increase in 34% of rail freight volume over the five year period.

RAIL CORRIDORS	2006 FREIGHT DATABANK (million tons per annum)	2011 FREIGHT DATABANK (million tons per annum)	TREND
Pretoria - Musina Line	3.11	1.86	-67.20%
Groenbult-Komatipoort Line	0.29	6.15	95.28%
Lephalale – North West Border Line	6.29	6.77	7.09%
<b>Total</b>	<b>9.69</b>	<b>14.78</b>	<b>34.44%</b>

There are currently two airports that handle substantial air freight in Limpopo Province namely Polokwane and Phalaborwa airports. Overall the total average annualised freight (imports and exports) at both airports increased by 23.5% between 2010 and 2011.

## Future freight projections

Future freight projections are mainly influenced by the following aspects:

- Socio-economic changes;
- Land-use changes which includes industry, production, natural minerals being mined etc;

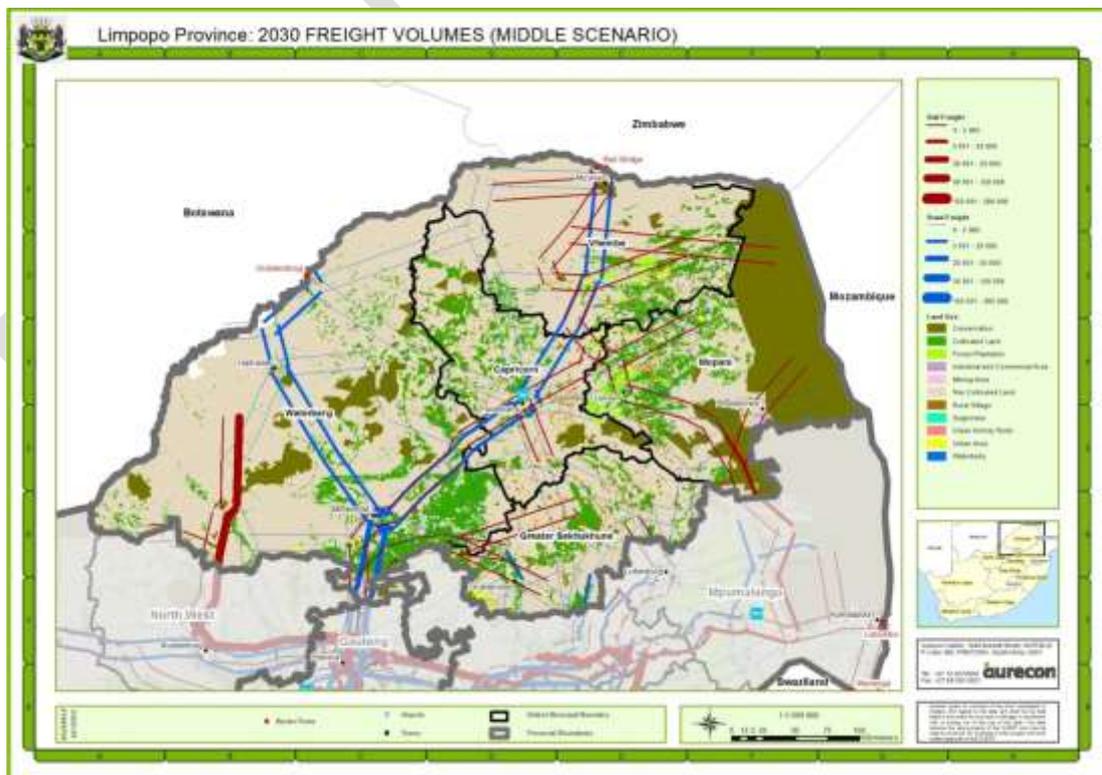
- Commodities being transported; and
- In Limpopo's case the unique location of the province means that there is an influence from conditions in the neighbouring countries on Limpopo as well. For instance lack of certain products in neighbouring countries can cause an increase in demand and thus exports from South Africa to those countries, which in turn can cause an increase of freight movement in the province. This aspect is however difficult to quantify and predict and can therefore not be taken into account. It is an aspect that must be noted though, because opportunities can arise for Limpopo to grow economically and healthy international relations are therefore deemed essential.

The National Transport Master Plan (Natmap - 2009) developed a comprehensive model of the freight transport systems of the country that has been created from available data, covering ports, road corridors, rail corridors, pipeline transport and air cargo. The information has been collected from a variety of sources, including:

- Rail freight data was obtained from Transnet, covering all movements for the financial year 2005;
- Road freight data was collated from the 2006 Limpopo databank and then adapted and updated with industry information, press reports, road count information and import-export data;
- Ports information was obtained from Transnet National Ports Authority (TNPA) for all commodity movements through all ports for the period 2003 -2008;
- Pipeline data was obtained from Transnet for 2006 and was adapted from press reports for envisaged developments; and
- Air Cargo information was been obtained from Airports Company South Africa (ACSA) and various sources.

The information was integrated into a model of the national freight system where the origins and destinations of cargo movements were defined into a national matrix of 145 areas (zones) covering the whole country and include transport to and from neighbouring states.

The figure below illustrates the 3020 Natmap freight volume projections.



Overall there is significant growth in the freight that needs to be transported in future in Limpopo province by means of road, rail and air. Mining is the biggest contributor (especially coal) to freight transport demand via road and rail in future.

Infrastructure investment should be aligned to meet these future demands and freight operations activities should be optimised as this is critical to the overall success of freight transport in Limpopo province.

## Identified Freight Issues

The Status Quo Report illustrated the significant growth in freight production and some of the constraints experienced with infrastructure developments and policies that facilitate freight logistics currently and that will have to be addressed in order to meet the future demand. These key freight transport gaps are presented in the table below.

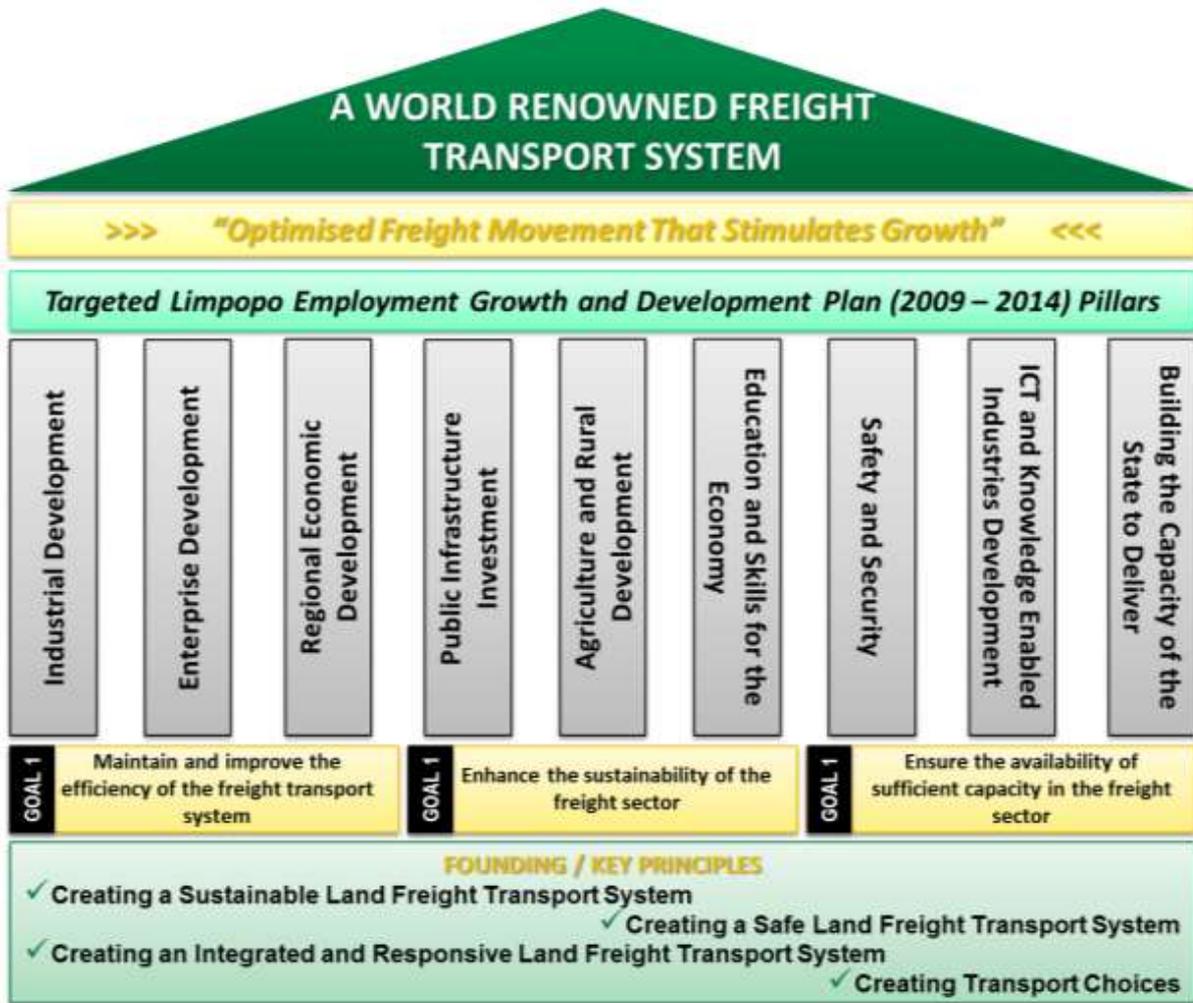
CLUSTER	KEY CHALLENGE
<b>Economic</b>	Diversification of the economy
	High poverty levels as well as high unemployment rate.
	Skills and capacity
	Lack of coordination in planning.
<b>Institutional</b>	Lack of Integrated Planning
	Limited Freight Expertise
	Lack of Freight Transport Information
<b>Legal and Policy</b>	Lack of guideline plans
<b>Infrastructure</b>	Road
	Rail
	Air
<b>Operations</b>	Road
	Rail
	Air

## Limpopo Freight Vision, Mission and Goals

The current period is seen as a unique opportunity for Limpopo – the ‘heartland of Southern Africa’ – to position itself to be one of the prominent leader in economic growth and prosperity in the region.

The province’s ability to move produce efficiently, seamlessly and substantially through and within its jurisdiction is therefore considered to be fundamental in ensuring a competitive economy. It becomes imperative that the location of freight activity areas as well as the way they are moved – the modes, the type of vehicles, the routes or the time of day to making become optimised.

The following figure summarises the core aspects of the Limpopo Freight Transport Strategy Structure.



## Achieving the Vision

The vision sets out a new freight direction for Limpopo for the next 20 years. The vision, which cannot be achieved through a single measure, requires an integrated approach with a package of measures.

For the strategy to work the integrated approach is underpinned by the key principles (sustainability, integration, safety and responsiveness) that support the overall vision of an affordable, integrated, safe, responsive and sustainable land transport system.

The diagram below illustrates the relationship between the vision, goals, key result areas and key principles that are set out in this strategy.





## Legal and Policy Analysis

The legal and policy analysis identified the following key policy challenges:

- There is **lack of policy guidelines regarding road infrastructure improvements** to provide more definite collaboration between Government Spheres;
- There is **lack of co-ordination between National, Provincial and Municipal spheres** regarding road transport planning, maintenance and operations in the Province;
- **Lack of capacity to perform legislative functions** - policies, acts, frameworks are enacted at National and Provincial level but there is no mechanism or monitoring strategy to ensure that policy statements, legislation and objectives are effectively implemented;
- **Lack of legislation limiting Freight Transport to Designated National Routes** - the National Freight Logistics Strategy highlights that there should be legislation that will limit freight transport to designated national routes or measures such as pre-tolling should be used to counter the problem of abuse of provincial and regional roads;
- **Lack of Legislation with the Provision of Incentives for Mode Shift from Road to Rail** - the National Freight Logistics Strategy further highlights the lack of legislation providing incentives for mode shift from road to rail as a challenge for freight transport development. Legislative efforts should be made through the new proposed Rail Act to provide incentives to move freight back from the road to the rail mode, provided rail infrastructure and operations are sufficiently improved;
- **Lack of legislation compelling the provision for dedicated lanes for trucks on freight transport routes.** Currently heavy vehicles are mixed up with other vehicles on the roads. This results in conflicts which causes road traffic accidents.
- **Lack of legislation regulating the gathering and dissemination of transport data by the National Department of Transport, provinces, operators etc.** A draft Bill was prepared for the National Department of Transport but no progress has been made to take it through the required legislative processes.
- **Lack of legislation providing for the implementation of the planning, institutional and regulatory recommendations made in the "NATMAP" report.** A draft Bill (National Transport Planning and Implementation Bill) has been prepared and submitted to the National Department of Transport in 2011 but no progress has been made to take it further through the required legislative processes.

## Institutional Analysis

Freight transport planning, infrastructure management, regulation as well as industrial coordination and communication are guided by the type of institutional arrangement found in the Province. The following are key challenges hampering proper functioning of freight transport institutions in the Province:

- Lack of Integrated Planning;
- Lack of Freight Transport Expertise and Limited Local Capacity; and
- Lack of Freight Transport Information.

## Limpopo Freight Transport Implementation Plan

The implementation plan identified projects in each cluster that can assist the province to attain the vision of their freight transport strategy. The implementation plan table specifies the project with a description, purpose, proposed Implementation agency, Limpopo Economic Growth and Development Strategy Pillar that the project aligns with, the impact of the project within that specific pillar and the estimated high level cost (where it could be determined) in million rands.

## Funding for Freight Transport Planning in Limpopo

It has been indicated in a number of transportation conferences and forums, that Government (both National and Provincial) have funding challenges to maintain and construct new transportation infrastructure. Various funding options have been considered as a solution for this challenge and they include the use of:

- Public Private Partnerships (PPPs);
- tolling;
- road maintenance levy (RML);
- transit fees;
- vehicle registration - and permit fees;
- abnormal load fees; and
- overloading fees.

These alternative funding options can also be explored by the Limpopo province to assist with the optimisation of freight transport in the province.

## Monitoring

Indicators are proposed for monitoring the implementation of the Limpopo Freight Strategy. The success of any strategy is dependent on the monitoring framework put in place to assess if the desired vision and objectives are achieved. The evaluation and monitoring of the provincial freight strategy will be an on-going process. It will start as soon as the Freight Strategy is adopted. Indicators can be utilized to monitor the progress as well as the implementation of the freight strategy.

The indicators utilized for the monitoring and evaluation of the Provincial Freight Strategy should meet a certain criteria. This includes:

- Indicators should be clearly specified and measurable regularly;
- They should be relevant to the characteristic being examined;
- Indicators should be obtained from a credible and reputable data source;
- They should possess an established measurement baseline one that can be developed; and
- Indicators should have the ability of being comparable with other provinces or at national level.

# 1. Introduction

## 1.1 What is in this Strategy?

This report sets the overall direction for the development of the freight transport strategy in Limpopo. It contains a number of chapters that must be considered together to achieve the best possible outcome for freight transport.

- **Chapter 1** (this chapter) introduces the report, providing the background to preparing the report as well as its purpose;
- **Chapter 2** illustrates Trends and Issues for Limpopo, contains background information about transport trends and issues for the region. This includes a commentary about current freight operations and freight requirements. Understanding the present and the past are critical to making informed decisions for the future.
- **Chapter 3** contains the “Vision, Mission and Goals for Limpopo’s Freight”. There are fourteen goals that describe the desired outcomes of the Strategy.
- **Chapter 4**, entitled Achieving the Vision, is the “engine” of the Strategy. The key principles of sustainability, safety, integration and responsiveness are fundamental for achieving the Vision.
- **Chapter 5**, Implementing the Strategy, outlines how the Strategy will be made to work through implementing the packages of activities.
- **Chapter 6**, Funding, outlines current freight transport planning spending, funding sources and funding issues for the future.
- **Chapter 7**, Monitoring, identifies how the Strategy should be monitored using indicators and measuring progress towards the targets and Vision.

## 1.2 Background

The Limpopo Freight Transport Strategy commenced in 2010 with the 2006 Freight Data Bank as the main contributor to the development of the strategy after conducting a situational analysis and identifying gaps to be addressed. However, the Limpopo Department of Roads and Transport (LDRT) decided that this data was outdated and appointed another service provider (Safiri (Pty) Ltd) to update the Provincial Freight Data Bank.

This process commenced beginning 2011 during which the development of the freight transport strategy was put on hold until such time that the updated Freight Data Bank information was available from December 2011.

The two freight data banks (2006 and 2011) enabled comparing changes in freight movement and volumes in Limpopo Province and drawing conclusions from that which served as input for the freight transport strategy development.

## 1.3 Context

As Limpopo’s economy and population grows over the next decade or more, it is likely that so too will its demand for goods and its transport. The South African government advocates and accepts that there is a relationship between transport and economic growth. The Limpopo Province identified in their Growth and Development Strategy (GDS) that:

**“...transport as an enabler in facilitating economic growth and movement of people, and goods and services.”**

A corridor analysis of the main freight transport corridors was executed to determine freight movement patterns attained over the past five years from 2006 to 2011. The freight travel patterns in Limpopo Province have changed significantly over the past five years. Road has become the predominant mode for transporting a majority of commodities. This is primarily

due to mode shift from rail to road that is induced by closure of some of the rail lines/stations in the province that used to handle freight commodities. Other evident reasons for the road mode preference are the mode's speed, convenience, security and lack of rail capacity to handle general freight. It can be considered therefore that currently road transport appears to be the most efficient and effective means of transporting freight.

Movement of freight by road has many unfavourable implications - road safety, harm to the environment and quality of life of the area could also be affected detrimentally. Responding to the freight challenges requires a comprehensive plan of action by the Limpopo Province – a comprehensive plan that complements overall Limpopo's planning framework.

## 1.4 Purpose of the Report

The ability to move goods efficiently, seamlessly and substantially through and within Limpopo Province is considered to be key in making the province productive, economically competitive and making the best use of the provinces' unique location (as the most northern region) within South Africa.

The Limpopo Province is committed to ensuring a high quality, high capacity, well connected, flexible and sustainable freight transport system – a system that supports the operation of a highly competitive freight industry that meets the challenges of growth.

Therefore the overarching purpose of this Freight Transport Strategy is to drive the development of an efficient, sustainable freight network for the future balance of the needs of the growing Limpopo economy and population.

This Strategy sets the framework for addressing a range of freight transport related issues across Limpopo, clearly describing the gaps, problems and demand facing the province now and in the future.

## 1.5 Approach and Methodology

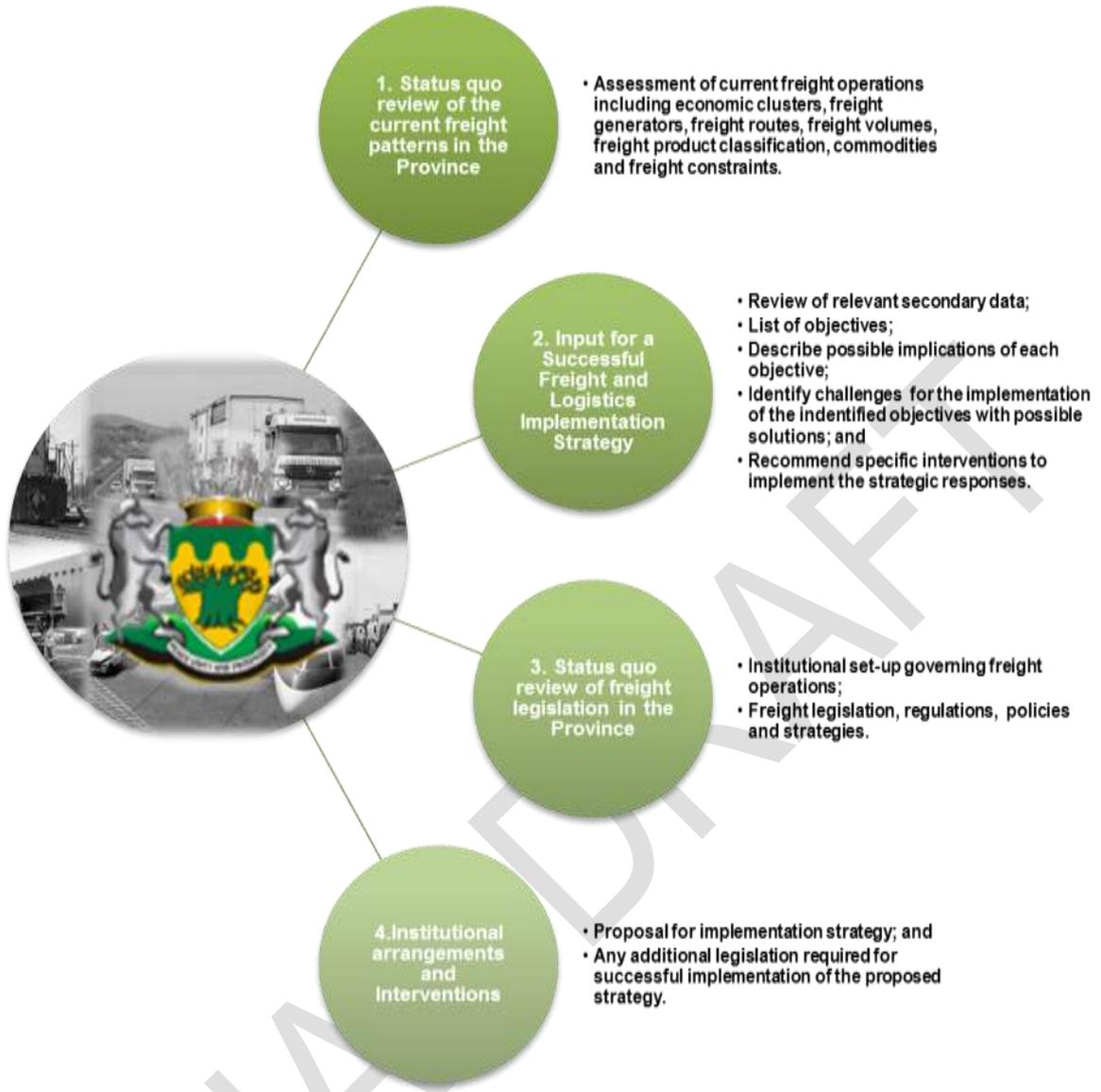
The primary objective of the study is to develop a freight transport implementation strategy for the Limpopo Department of Roads and Transport that will provide guidance with respect to the current status quo of freight transport in the province, as well as to provide a tool that will ensure effective and efficient freight transportation planning for the province.

The development of the freight transport strategy entailed two phases, namely:

- Phase 1: Data Collection and Stakeholder Consultation; and
- Phase 2: Development of Freight Transport Implementation Strategy.

The aforementioned phases were broken down into four main aspects as illustrated in Figure 1-1.

Figure 1-1: Summarised Freight Strategy Development Methodology



## 2. Freight Transport Trends, Projections and Issues for Limpopo

### 2.1 Introduction

Limpopo Province is one of the nine provinces of South Africa. The province is bordered to the north by Zimbabwe and Botswana, in the east by Mozambique and on the south and west by the provinces of Mpumalanga, North West and Gauteng. The province consists of five district municipalities and 23 local municipalities, which cover a total of 125,754 km<sup>2</sup>. The district municipalities are as follows:

- Vhembe District Municipality;
- Capricorn District Municipality;
- Mopani District Municipality;
- Greater Sekhukhune District Municipality; and
- Waterberg District Municipality.

A map of the province showing the different district municipalities is indicated in Map 2-1. The land transport network comprises of the national rail network; the national and provincial road network; and strategic airports that provide air freight services.

### 2.2 Current Freight Trends

The freight sector is a substantial economic activity in Limpopo. It generates and facilitates economic growth and employment, and accounts for a significant share of the provincial GDP. The main sources of data to determine the freight trends of the province are the 2006 and 2011 freight databanks respectively.

#### 2.2.1 Road Freight Trends

##### 2.2.1.1 Road Freight Volumes

Map 2-2 and Map 2-3 indicates the 2006 and 2011 average projected freight volumes in both directions (including the percentage directional split) onto the road network from the survey location on these corridors respectively. Map 2-3 also indicates the 2006 (survey points indicated with orange blocks) and 2011 (new survey points indicated with purple blocks) freight data bank traffic survey locations. Table 2-1 indicates the summarised freight trends by comparing the volumes of the two freight databanks. From these two freight volume maps and Table 2-1 the following main observations are made:

- The survey locations of the old (2006) and new (2011) freight data banks differed significantly. By projecting average freight volumes onto corridors, a direct comparison is possible for not all, but corresponding corridors;
- There were 10 surveyed freight corridors for 2006 and 2011 respectively, but three of the corridors differed (shaded in grey in Table 2-1) and could thus not be compared;
- In general freight volumes increased from 2006 to 2011, especially the N11 towards Groblersbrug, the R521 and the R37;
- The freight volumes on three of the corridors decreased (N1 -North of Polokwane, R33 and R71) of which the R33 and R71 were significantly lower;
- The freight volumes on three of the corridors increased significantly (N11 - Northwest of Mokopane, R37 and R521); and
- Overall the total freight volumes on the corresponding corridors increased by 32.04%.

Table 2-1: Summary of Freight Trends on Road Corridors

2006 FREIGHT DATABANK CORRIDORS		AVERAGE FREIGHT VOLUMES (million tons per annum)	2011 FREIGHT DATABANK CORRIDORS		AVERAGE FREIGHT VOLUMES (million tons per annum)	TREND
1	N1 (North of Polokwane)	2.77	1	N1 (North of Polokwane)	2.62	-5.73%
	N1 (South of Polokwane)	3.18		N1 (South of Polokwane)	3.48	8.62%
2	N11 (Northwest of Mokopane)	1.28	2	N11 (Northwest of Mokopane)	4.21	69.60%
	N11 (Southeast of Mokopane)	1.38		N11 (Southeast of Mokopane)	1.52	9.21%
3	R33	1.47	3	R33	0.74	-98.65%
4	R71	1.62	4	R71	1.05	-54.29%
5	R37	0.41	5	R37	2.59	84.17%
6	R81	1.18	6	R81	1.23	4.07%
7	R521	0.58	7	R521	2.97	80.47%
<b>Total</b>		<b>13.87</b>	<b>Total</b>		<b>20.41</b>	<b>32.04%</b>
8	R510	0.51	8	R519	1.00	Not applicable
9	R516	0.49	9	R40	1.00	
10	R555	1.68	10	R33 – south in in Greater Sekhukhune district (R25 linking with R579)	1.69	

### 2.2.1.2 Truck Traffic Volumes

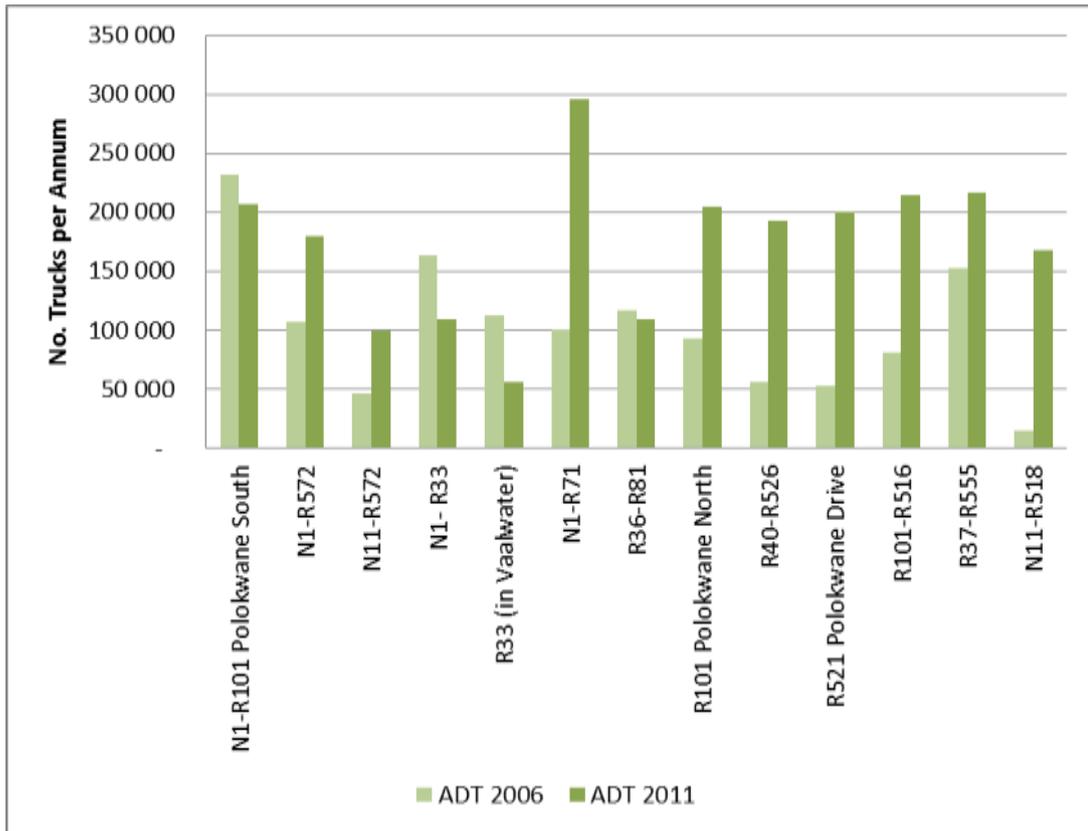
A comparison was done at selected sites with regards to freight vehicle volumes of the 2006 and 2012 freight databank respectively. Over the last five years freight traffic volumes has increased by approximately 105% on average (refer to Figure 2-1). Increase in traffic volume in excess of 100% is evident on the R523; R518; R521; R40; R71; R516; N11; R101.

The R519; N1 and R555 experienced a positive increase of less than 100%, whilst negative growth is observed on the N1 (between Louis Trichardt – Polokwane), the R33 and the R81.

In general there is a direct correspondence between increases/ decreases of the number of trucks annually on a corridors and the freight volume on that same corridor – the R33 is a good example of such a case since there is a decrease in truck traffic as well as a decrease in freight volume. The trends visible in Figure 2-1 in general correspond with the freight volumes trends described in the previous section.

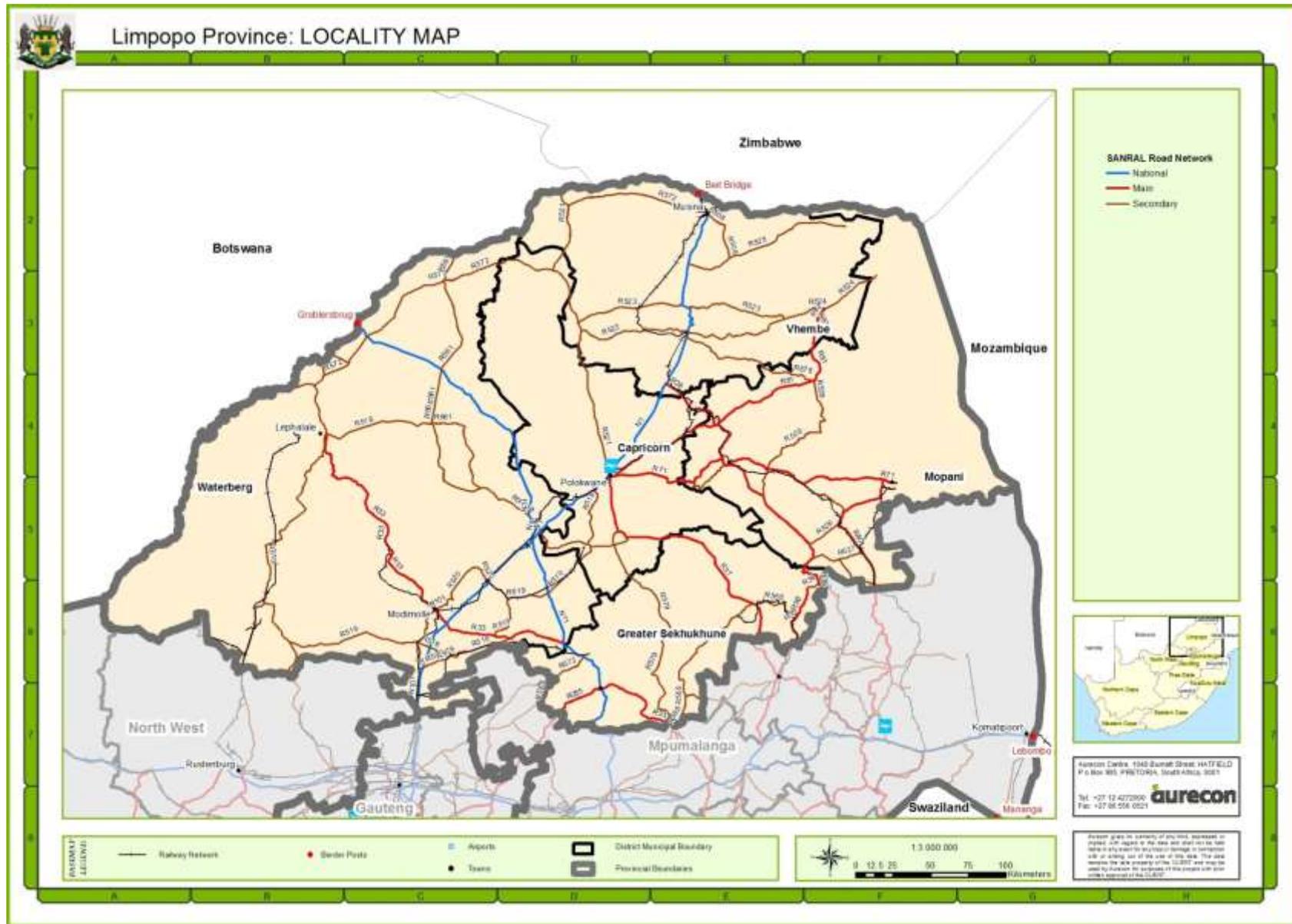
There can however be cases where a decrease in vehicles does not necessarily implicate the decrease in freight volume on that corridor. One such a case is the R81 – there is a decrease in annual daily truck volumes, but there is an increase in the freight volume on that corridor. An explanation of for this could be that less, but larger trucks make us of this route to transport freight.

Figure 2-1: Road Freight Vehicles Volumes Comparison at Selected Sites

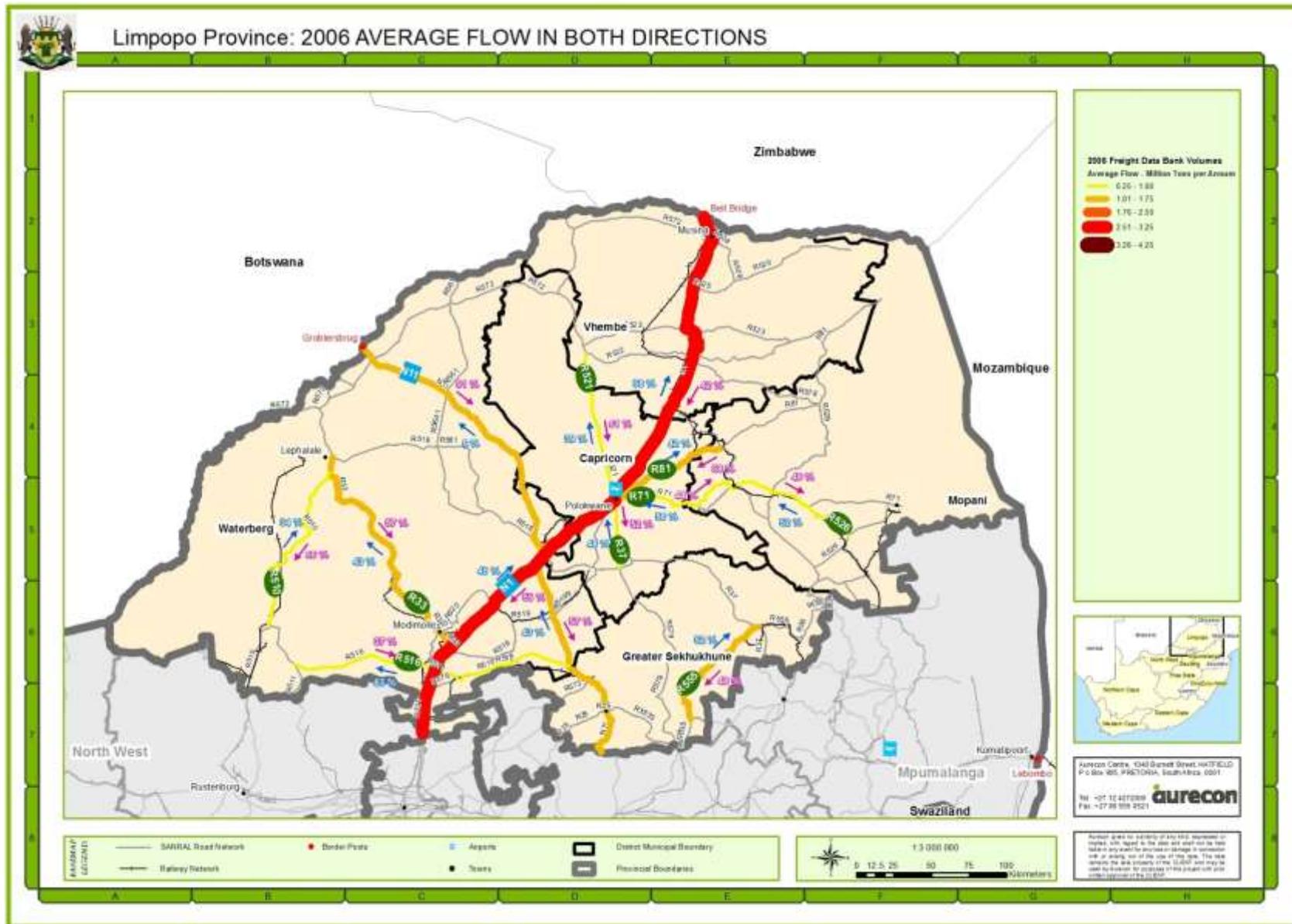


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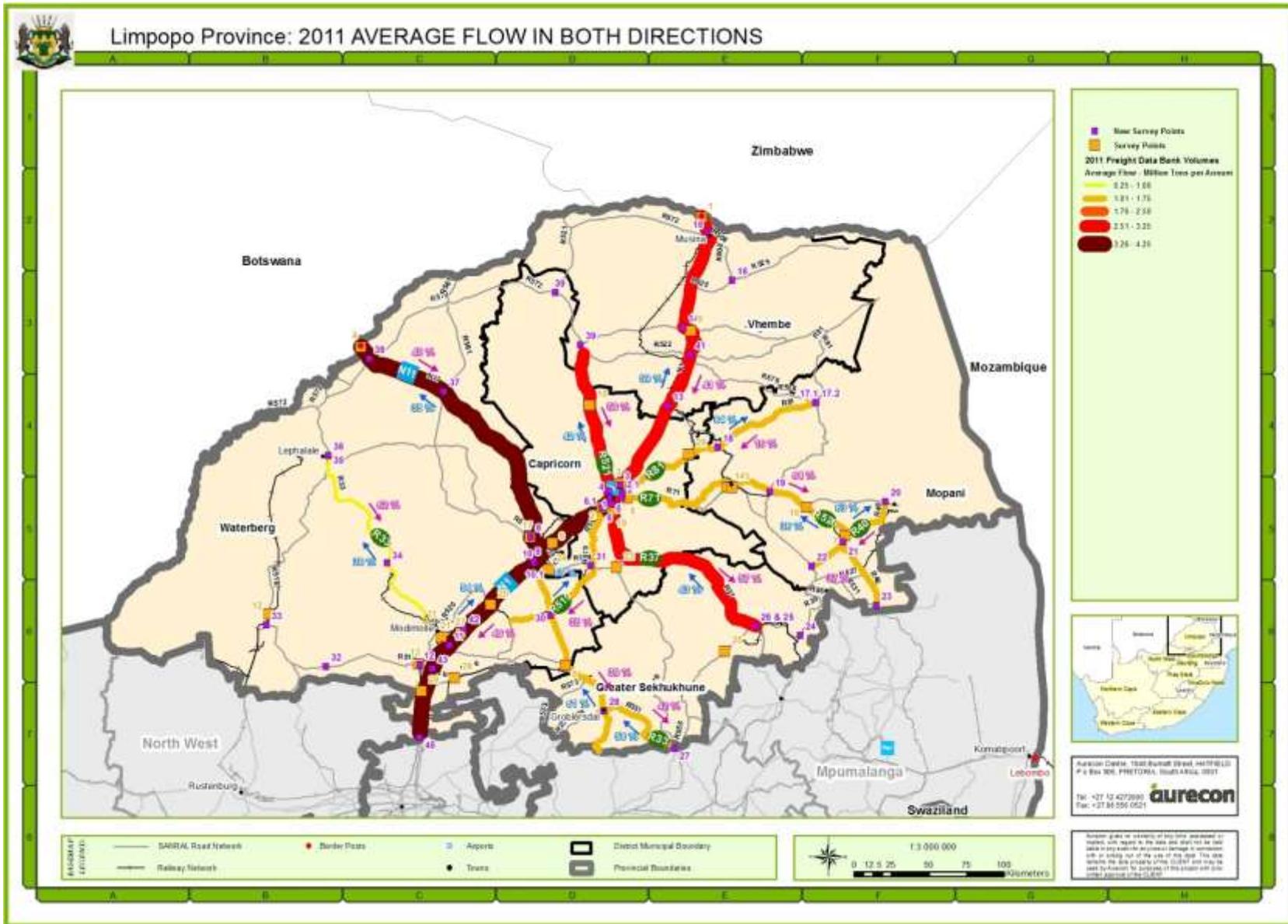
Map 2-1: Limpopo Province Locality and District Municipalities



Map 2-2: 2006 Freight Data Bank – Average Freight Volume Flow in Both Directions



Map 2-3: 2011 Freight Data Bank – Average Freight Volume Flow in Both Directions

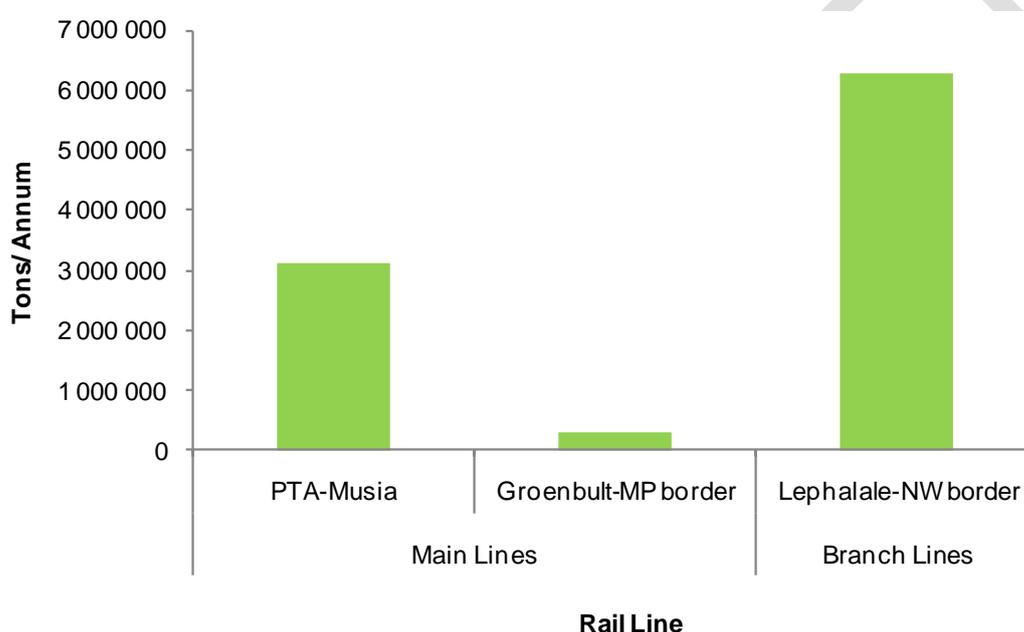


## 2.2.2 Rail Freight Transport Trends

There are two main rail freight lines in the Limpopo Province namely the Pretoria-Musina and the Groenbult-Komatipoort and two branch lines which run between Lephalale and North West Province border and Marble Hall and Zebediela. The Marble Hall – Zebediela Line has been closed (Refer to Map 2-4.).

Figure 2-2 shows a summary of the total tonnage transported on these lines according to the 2006 Freight Databank. The Lephalale – North West border branch line recorded the highest tons per annum. Approximately 65% (6.29 million tons) of the total annual tonnage was transported on this line per annum. The Pretoria – Musina line recorded a total of 3.11 million tons annually and Groenbult-Komatipoort line transported a total of 0.29 million tons per annum.

Figure 2-2: Total Freight Volumes on Limpopo Rail Line (2006)



Map 2-5 indicates the rail freight volumes of the 2011 freight data bank. Table 2-2 summarises the freight trends on the rail corridors within the province by comparing the total freight volumes per annum for the 2006 and 2011 Freight Databanks respectively.

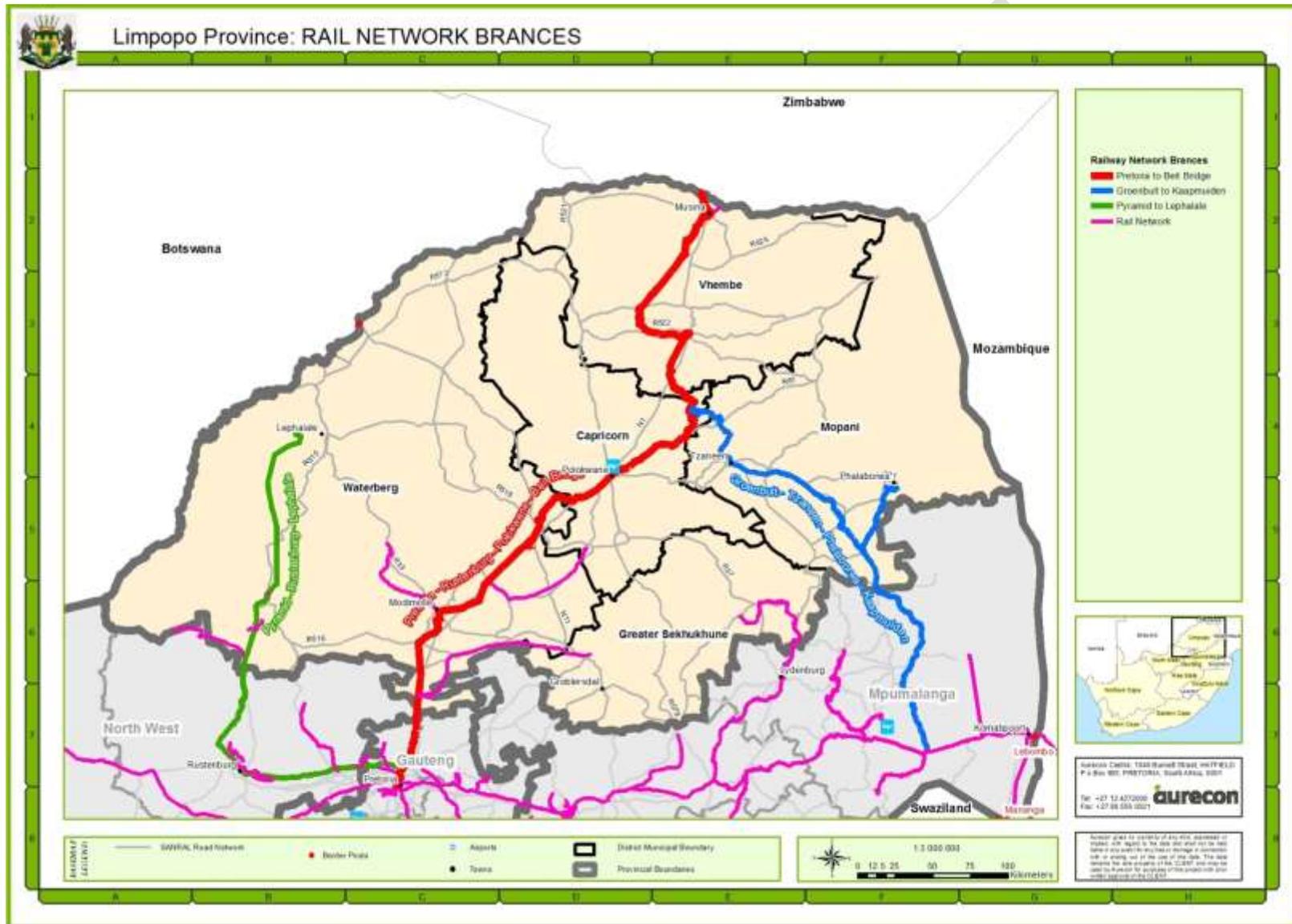
Table 2-2: Summary of Freight Trends on Rail Corridors

RAIL CORRIDORS	2006 FREIGHT DATABANK (million tons per annum)	2011 FREIGHT DATABANK (million tons per annum)	TREND
Pretoria - Musina Line	3.11	1.86	-67.20%
Groenbult-Komatipoort Line	0.29	6.15	95.28%
Lephalale – North West Border Line	6.29	6.77	7.09%
<b>Total</b>	<b>9.69</b>	<b>14.78</b>	<b>34.44%</b>

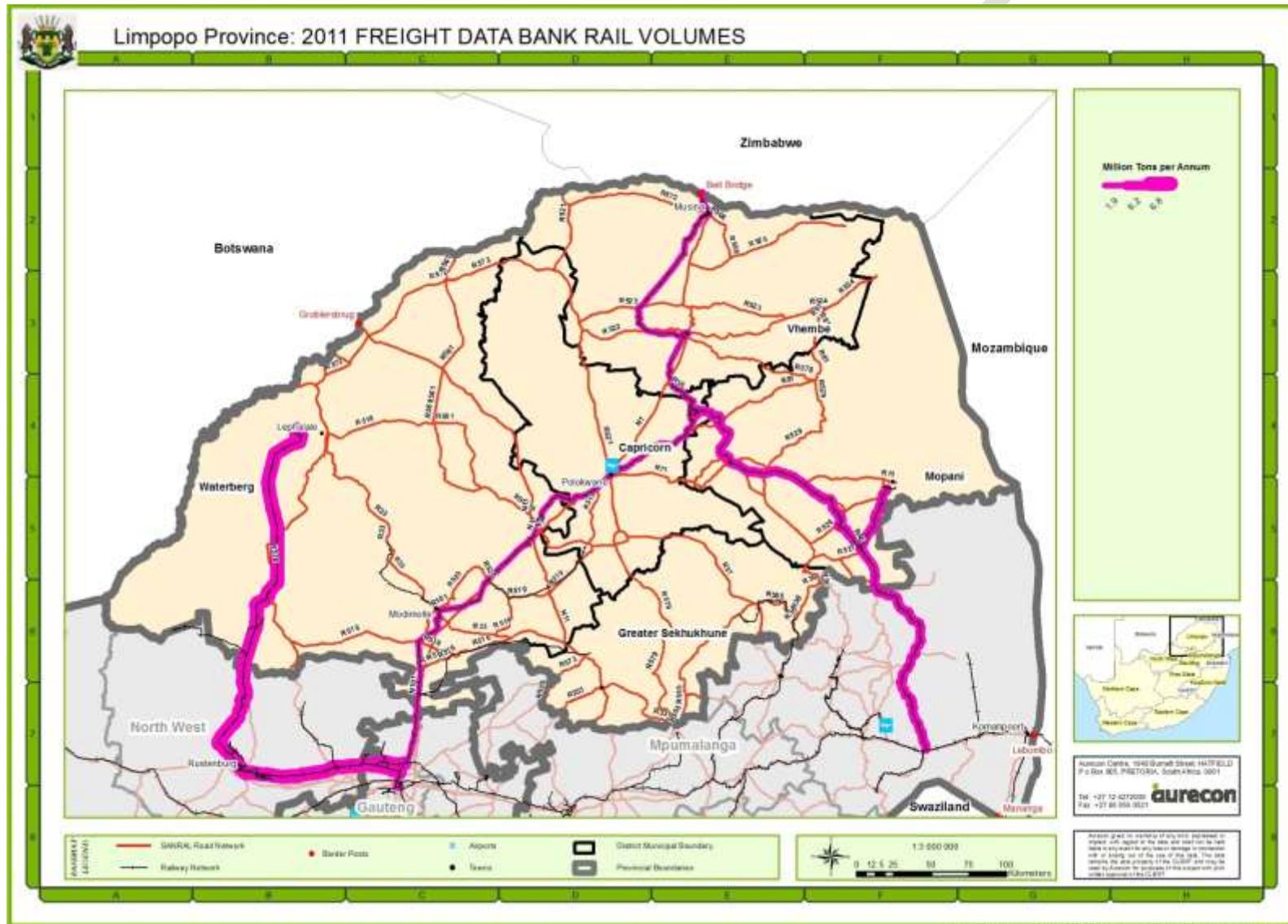
From Table 2-2 the following observations are made:

- The freight volume on the Pretoria - Musina Line decreased significantly (-67.20%);
- The freight volume on the Groenbult-Komatipoort Line increased dramatically (95.28%);
- The freight volume on the Lephalale – North West Border Line increased (7.09); and
- Overall the rail freight volumes in Limpopo province increased by 34.44%.

Map 2-4: Limpopo Rail Network Branch Lines



Map 2-5: 2011 Freight Data Bank Rail Volumes



### 2.2.3 Air Freight Transport Trends

There are currently two airports that handle significant air freight in Limpopo Province namely Polokwane and Phalaborwa airports.

Historic data is not available on the freight volumes and only relatively current data for selected months for 2010 and 2011 can be presented. Table 2-3 is a summary of this data and the trends that could be established from the limited data. It must be noted that seasonal differences in the freight volumes are evident – this can be due to seasonal fresh produce that forms part of the freight etc.

From Table 2-3 the following observations can be made:

- Polokwane airport handles approximately 90%, whilst Phalaborwa airport handles approximately 10% of the total air freight between these two airports;
- Approximately 80% of freight handled are imported, whilst only approximately 20% are exported;
- Between 2010 and 2011, the total average annualised freight (imports and exports) increased with 26% at Polokwane airport;
- Between 2010 and 2011, the total average annualised freight (imports and exports) decreased with 1.3% at Phalaborwa airport; and
- Overall the total average annualised freight (imports and exports) at both airports increased by 23.5% (to 64,363 kg = 64.36 tons per annum).

Table 2-3: Summary of Air Freight Trends

AIRPORT	2010 (MAY to DEC.)		TOTAL AVERAGE PER MONTH	ANNULAISED AVERAGE (kg)	FREIGHT PER AIRPORT (%)	2011 (JAN. to OCT.)		TOTAL AVERAGE PER MONTH	ANNULAISED AVERAGE (KG)	FREIGHT PER AIRPORT (%)	TREND (annualised)
	IMPORT (kg)	EXPORT (kg)				IMPORT (kg)	EXPORT (kg)				
Polokwane	35897	7385	3607	43282	88%	46622	11862	4874	58484	91%	25.99%
Phalaborwa	3824	2133	496	5957	12%	4308	1571	490	5879	9%	-1.33%
<b>Totals</b>	<b>39721</b>	<b>9518</b>	<b>4103</b>	<b>49239</b>		<b>50930</b>	<b>13433</b>	<b>5364</b>	<b>64363</b>		<b>23.50%</b>
	<b>(81%)</b>	<b>(19%)</b>				<b>(79%)</b>	<b>(21%)</b>				

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## 2.3 Future Freight Projections

Future freight projections are mainly influenced by the following aspects:

- Socio-economic changes;
- Land-use changes which includes industry, production, natural minerals being mined etc;
- Commodities being transported; and
- In Limpopo's case the unique location of the province means that there is an influence from conditions in the neighbouring countries on Limpopo as well. For instance lack of certain products in neighbouring countries can cause an increase in demand and thus exports from South Africa to those countries, which in turn can cause an increase of freight movement in the province. This aspect is however difficult to quantify and predict and can therefore not be taken into account. It is an aspect that must be noted though, because opportunities can arise for Limpopo to grow economically and healthy international relations are therefore deemed essential.

### 2.3.1 Causes of Freight Traffic Growth

There are a number of reasons for the increase in freight traffic growth of which the main aspects are mentioned above and will be discussed in more detail in the following sections.

#### 2.3.1.1 Economic and Land Use Changes

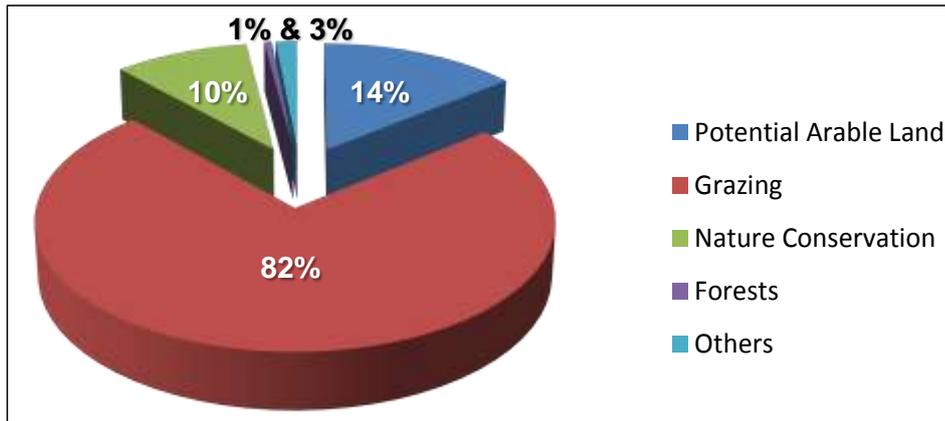
There are three economic sectors which are primarily drivers of freight movement in Limpopo. They include: Agriculture, Manufacturing and Mining. Mining is said to be the major contributor to the provincial freight industry. It is also envisaged that the mining sector will still be the main driver for freight in Limpopo even in the future years to come.

##### 2.3.1.1.1 The Agricultural Cluster

Agriculture includes livestock and horticulture production. Agriculture is essential in the economic and social development of the Limpopo Province as far as employment, food production and export is concerned. The agriculture sector is divided into commercial, emerging commercial and subsistence farming. However, for the purpose of this analysis, given the size contribution to the province's economy (70% in 2006), only commercial farming will be considered as that have a significant impact on freight transport generation (Department of Plant Production, 2006).

The Limpopo Growth and Development Strategy propose that Vhembe, Mopani and Bohlabela districts be given priority in the development of an Agriculture/ Horticulture Cluster. The proposed cluster should consist of the following facilities (value-chain): processing, packaging and exporting industries. About 88% of Limpopo is farm land. Figure 2-3 illustrates the main farming uses in the province. From the figure, it is evident that most of the farm land in Limpopo is used for grazing. Just over 14% of the land is potential arable. Almost 10% consists of conservation areas and less than 1% is forests.

Figure 2-3: Limpopo Farm Land Distribution



Source: Department of Plant Production, 2006

## Horticulture

Limpopo Province constitute of a surface area of approximately 11.96 million hectares, with 70% being commercially exploited whilst 30% is occupied by emerging farmers.

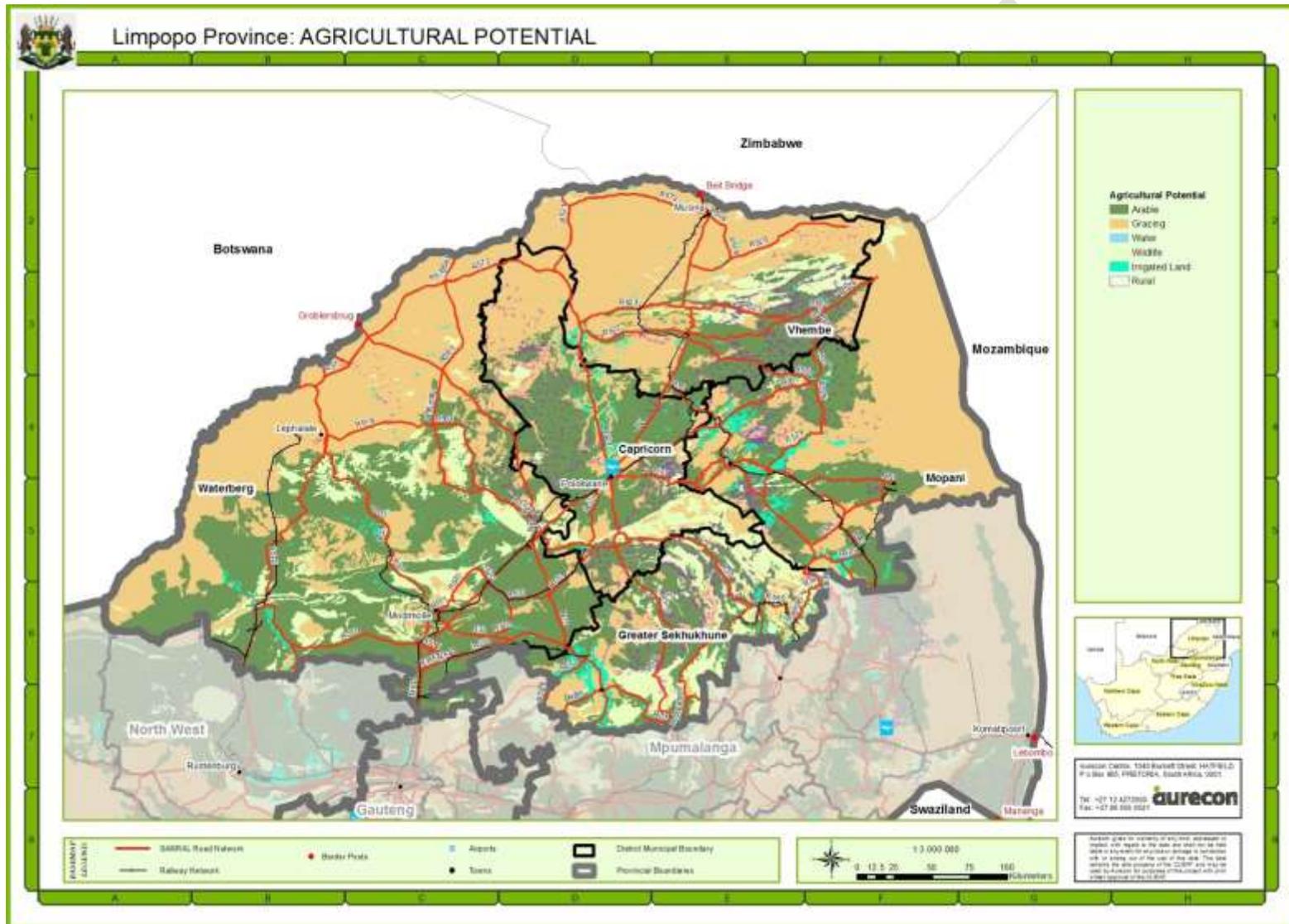
Approximately 14% of the total land area has potential for cultivation purposes and the rest is only suitable for grazing, nature conservation, forestry, farmland and non-agricultural usage. Map 2-6 illustrates the agricultural potential in Limpopo. The illustration of Limpopo's agricultural potential is further supported by Map 2-7, which indicated that most tropical fruit production is conducted in Tzaneen and Makhado, and other products such as sunflowers, peanuts and maize are cultivated in Modimolle and Bela-Bela.

Map 2-7 also illustrates that the high cultivation areas in Limpopo are easily accessible from the Polokwane International Airport, which means that there is great potential for air freight to transport perishable goods from the agriculture/horticulture industry to local, regional and international markets.

Map 2-8 indicates processing areas for the horticultural cluster. Thus where the horticulture products feeds into the industry whereby these products are supplied to a factory/ processing plant from which it is then exported to retail suppliers.

Horticulture contributes significantly to the freight volumes on the provincial corridors. Apart from the horticulture clusters and processing areas indicated in Map 2-7 and Map 2-8 respectively, Map 2-6 indicates the agricultural potential of the province from which it is evident that there are significant portions of arable land which can be used for future crop production. It is important that these areas are accessible from and to the provincial freight corridors.

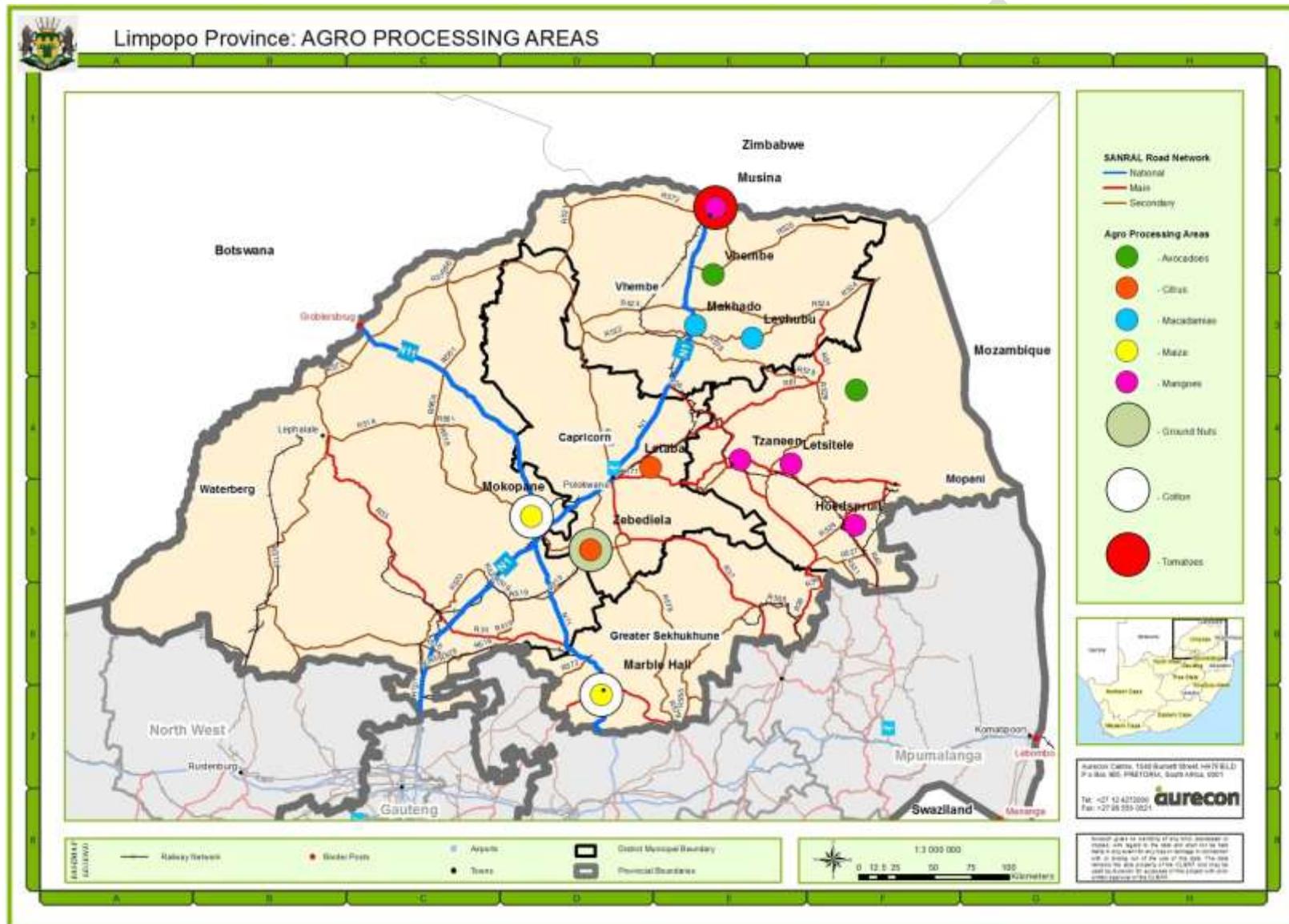
Map 2-6: Agricultural Potential in Limpopo



Source: NATMAP Limpopo Province, October 2008



Map 2-8: Horticultural Processing Areas



## Livestock

Table 2-4 summarises Limpopo's projected livestock production from 2007 to 2020 (Department of Animal Science, 2006).

Table 2-4: Limpopo Livestock Production from 2007 to 2020

LIVESTOCK	2007	2010	2013	2016	2019	2020	GROWTH
<b>Cattle</b>	1 208 345	1 216 208	1 224 122	1 232 087	1 240 105	1 242 789	3%
<b>Sheep</b>	109 899	94 899	81 946	70 761	61 103	58 185	-89%
<b>Goats</b>	530 583	467 655	412 190	363 304	320 215	307 020	-73%
<b>Pigs</b>	286 829	342 278	408 446	487 404	581 627	616 921	54%
<b>Totals</b>	<b>2 135 656</b>	<b>2 121 040</b>	<b>2 126 704</b>	<b>2 153 556</b>	<b>2 203 050</b>	<b>2 224 915</b>	<b>4%</b>

Source: Department of Animal Science, 2006

From Table 2-4 the following observations can be made: (1) The productions of cattle will increase by 3%; (2) The production in sheep and goats will decrease dramatically with -89% and -73% respectively; (3) The production in pigs will increase significantly with 54%; and, (4) An overall growth of 4% in livestock production is predicted for 2020. An overall increase of 4% over a 13 year period is not deemed to have a significant impact on related freight volume increases.

## Forestry

South Africa's demand for wood is met predominantly from commercial forest plantations. Commercial plantations in Limpopo are located in Zone 1 of the forestry economic zones, **Table 2-5** shows the distribution of plantation areas per zone in South Africa, with Limpopo Province having the lowest plantation area of approximately 50, 000ha, a share of 4% of the total plantation areas in South Africa.

Table 2-5: Distribution of Plantation Area by Zone (2008/9)

Forestry Economic Zone	Plantation Area (ha)	% of Total	
<b>Zone 1</b>	Limpopo Province	49,669	4%
<b>Zone 2</b>	Mpumalanga North	225,065	18%
<b>Zone 3</b>	Central Districts	24,975	2%
<b>Zone 4</b>	Mpumalanga South	269,777	21%
<b>Zone 5</b>	Maputaland	17,024	1%
<b>Zone 6</b>	Zululand	77,091	6%
<b>Zone 7</b>	KwaZulu Natal Midlands	195,021	7%
<b>Zone 8</b>	KwaZulu Natal North	91,764	15%
<b>Zone 9</b>	KwaZulu Natal South	123,493	10%
<b>Zone 11</b>	Eastern Cape	122,549	10%
<b>Zone 12</b>	Southern Cape	61,623	5%
<b>Zone 13</b>	Western Cape	16,819	1%
<b>Total</b>		1,274,869	100%

Source: Department of Agriculture, Forestry and Fisheries, 2012.

While conducting their study on the transport infrastructure needs for the forestry sector the Department of Agriculture, Forestry and Fisheries confirmed the extent of both rail and road network serving the forestry industry in Limpopo as follows:

Table 2-6: The Extent of Road Network serving the Forestry Industry in Limpopo Province<sup>1</sup>

Road Number	Class	Length (km)
N1	1	528.2
R36	2	203.27
R523	1	67.34
R524	2	135.3
R528	2	34.76
R532	2	4.33
R578	2	92.36
R71	2	93.39
<b>Total</b>		1158.95

Source: Department of Agriculture, Forestry and Fisheries, 2012.

Table 2-7: Extent of Rail Network serving the Forestry Industry in Limpopo Province

Extent of Rail Network	Rail Category	Total Length (km)
	<ul style="list-style-type: none"> <li>• Makhado – Polokwane Cross Border Connector;</li> <li>• Groenbult – Limpopo Boundary Cross Border Connector;</li> <li>• Phalaborwa – Hoedspruit High Volume Feeder.</li> </ul>	399

Source: Department of Agriculture, Forestry and Fisheries, 2012.

#### 2.3.1.1.2 The Manufacturing Cluster

Limpopo Province has a range of industrial undertakings that have been established with the main manufacturing concentrations found in the Polokwane and Mokopane areas, with other industries being adjacent to mines or sources of raw materials.

The province has extensive logistics facilities, warehousing and supply centres for the handling of foodstuffs, household goods, building materials, fuel, and agricultural supplies, and is a major purchasing area for neighbouring countries to the north.

The following major manufacturing industries are observed in Limpopo:

- The major **chemical industry** in Limpopo is based at Phalaborwa where sulphuric acid and phosphoric acid are produced as by-products of the mining activities in the area. A significant proportion of the large volume of phosphate rock sent to Richards Bay is processed into phosphates for domestic use in the fertilizer industry. Approximately 471,000 tons of phosphoric acid was railed to six other provinces countrywide in 2005 and 23,000 tons of sulphuric acid was railed to the Democratic Republic of Congo. Chemicals transported by road on all national and provincial roads in the province totalled approximately 1,2 million tons in 2005.
- Processing of **agricultural products** (inputs, primary production, processing) in South Africa consists of 11 downstream agricultural sub-sectors of which, preservation of fruit and vegetables processing plays a major role in Limpopo. The locations and specialisations of the agri-processors in Limpopo Province are discussed in Agricultural Cluster section and indicated on Map 2-8.

<sup>1</sup> The extent of the forestry road network included in secondary transportation only, which encompasses the transport of timber from the roadside landing directly to the processing or mill site; transportation of timber from roadside to an intermediate storage site or logyard; and, transportation of timber from an intermediate storage site to the processing mill site.

- The **building materials** industry in Limpopo is a major user of road transport and this can be expected to continue into the foreseeable future.

A major cement production plant in the Limpopo is found in Dwaalboom. The plant produces approximately 900 000 tons of cement and this is expected to increase to 1.9 million tons per annum.

For the manufacturing of clay bricks in Limpopo an estimated 21, 000 tons per annum of coal, mainly from Witbank is transported by road. The coal is mixed together with an estimated 22, 000 tons per annum of clay, which is transported in by road from Midrand and Kranskop.

It is important that these areas are accessible from and to the provincial freight corridors. Most of the biggest manufacturing areas lie close to or within major towns ensuring better access to the freight corridors.

#### 2.3.1.1.3 The Mining Cluster

The Limpopo Province is abundant in mineral resources and base commodities, such as black granite and corundum. Consequently, there are approximately 70 operating mines – with 20 being large-scale mines and 50 small to medium scale mines, making the mining sector a major contributor to the provincial GDP.

Limpopo houses the largest diamond, copper and open-pit platinum mines in the country, as well as the biggest vermiculite mine and the second biggest antimony mine in the world. Map 2-9 illustrates the mining activities as well as reserves found in the Province including coal reserves in the neighbouring countries (Botswana and Zimbabwe). From the figure, it is evident that the active mines are almost evenly distributed within the Province and accessible by the Province's transport network.

*Please note that the coal reserves indicated on Map 2-9 of the neighbouring countries are schematic for the purpose of giving indicative linkages to the coal reserves of Limpopo Province.*

According to the Limpopo Growth and Development Strategy 2004 – 2014 (2007) the mining clusters in the province consist of a platinum mining cluster and a Coal and Petrochemical mining cluster. These are briefly discussed below.

- **Platinum mining cluster** on the Dilokong Corridor between Polokwane and Burgersfort (Sekhukhune District): Anchor projects on this cluster include the new platinum mines and smelter as well as the chrome mines and all ensuing up-stream developments (input suppliers) that emerge from these developments. Down-stream activities refer to the smelter that has already been constructed with the potential for expansion, as well as a refinery that is envisaged in the future and other high value uses like in the autocatalytic, glass, dentistry, fuel cells industries, etc.
- **Coal mining and Petrochemical cluster** at Lephalale on the East-West Corridor (Waterberg District): Anchor projects comprise of the expansion of the existing Grootgeluk Coal Mine and the power station and also to build an aromatics extraction factory, which form the core of this cluster. The factory will be fed with chemical grade coal from Grootgeluk Mine. A wide range of down-stream opportunities exists in the styrofoam, plastic, nylon, rubber product, non-recovery coking and char industries.



The NATMAP Limpopo Province Report highlighted the most important minerals that have an influence on freight transportation, namely platinum, coal, copper, diamonds, iron ore and gold. Table 2-8 presents major existing and potential mining activities for the future in Limpopo province. The table also give an indication of the impact on freight transport.

It is evident that by far Limpopo's coal reserves will have the biggest impact on land freight transport in future as also mentioned in the specific future mining projects below. The coal reserves in neighbouring countries also carries potential of being transported through the Limpopo province to sea ports for instance.

### Specific Future Mining Projects

Limpopo's mineral wealth should lead Limpopo to sustainable prosperity. In this regard, key projects and activities characterise the future mining activity in the area, namely:

- Exxaro's Grootgeluk mine, which plans to supply the R120-billion Medupi power station with about 14.6 tons of coal per annum for the next 40 years;
- **Limpopo contributes with 4% of South Africa's coal production. This figure is expected to reach 50% in 30 years' time;**
- About 400 mining and prospecting licenses have been granted throughout Limpopo;
- Diamond production in South Africa rose in 2010 to about seven million carats from 4.8 million carats in 2009. De Beers to spend R15-million on Venetia diamond mine, which produces 80% of the company's diamonds and 40% of the country's production;
- Consolidated Murchison Mine (ConMurch) at Gravelotte, producing 20% of the world's antimony. This mine is the second biggest producer of antimony in the world, after China;
- 400 000 tons of the 39% of the chromite produced by South Africa is found mined at the Dilokong Chrome Mine;
- A new R1.65-billion cement plant project in the south-western part of Limpopo is planned. A daily production of 2 500 tons of ordinary Portland cement is projected;
- There is a cement plant in Dwaalboom with a producing a capacity of 1.25 mta;
- The Tshikandeni mine produces 414 000 tons/annum of hard coking coal. The mine has proven reserves of 6 mt and resources of 36 mt;
- The Makhado Project forsee a production of 5mta of coking coal;
- Kumba Iron Ore's Thabazimbi Mine increased production form 1.8 million tons of iron ore in 2009 to 2 million in 2010. Kumba is running a pre-feasibility study to expand the life of the mine by implementing new methods of mining. The study is to be completed in 2013;
- Phalaborwa phosphate mine reported an increase of 14% in capacity and a R1.9 billion profit in 2009;
- Anglo Platinum is investing close to R6-billion in expanding its operations at Potgietersrust Platinum North. AngloPlat is also increasing capacity at its Twickenham mine expected to start producing 180 000 ounces per year in 2018;
- Sephaku Holdings is positive about tin, copper and fluorspar mineralisation at its site west of Mokopane;
- Another property in the Bela Bela area is being investigated for tin deposits.

#### 2.3.1.2 Freight Commodities Changes

The 2006 and 2011 freight data bank survey locations differed significantly, furthermore the commodity definition and inclusion between the two data banks also differed as the 2011 contains 16 commodities versus the 13 commodities of the 2006 data bank as shown in Table 2-9. In 2006 cement and coal was counted together, whilst the 2011 break bulk, livestock, containers and empty trucks which were not defined in 2006.

Table 2-8: Major Existing and Potential Mining Areas

MINERAL	SECONDARY MINERALS	AREA (MAJOR TOWN OR CENTROID)	EXISTING LARGE-SCALE MINING	LIFESPAN OF RESERVES	PREDICTED START OF MINING ACTIVITIES	BULK-VOLUME TRANSPORTATION	POTENTIAL TRANSPORTATION DESTINATION	GENERAL COMMENTS
Coal	n/a	Pontdrif	No		20-30 years	Yes	Richards Bay	<ul style="list-style-type: none"> <li>No rail access</li> </ul>
		Makhado (Louis Trichardt)	No		20-30 years	Yes	Richards Bay	
		Lephalale (Ellisras)	Yes	0-50 years		Yes	Richards Bay	<ul style="list-style-type: none"> <li>55% of national coal reserves</li> <li>Coal currently used for Matimba power station</li> <li>Plans to build additional Eskom power station</li> <li>Export-grade coal not used for power stations</li> <li>Plans to build Sasol plant</li> <li>Lack of water</li> </ul>
	Uranium	Bela-Bela	No		10-20 years	Yes	Richards Bay	
Platinum	Chrome	Mokopane (Potgietersrus)	Yes	0-50 years	Mining activities can be extended	No		<ul style="list-style-type: none"> <li>Production is limited to 2% annual international demand for platinum</li> </ul>
	Chrome & iron ore	Steelpoort	Yes	0-50 years	Mining activities can be extended	Platinum - no, Iron - yes	Iron to Witbank & Vereeniging	<ul style="list-style-type: none"> <li>Production is limited to 2% annual international demand for platinum</li> </ul>
Copper	Phosphate	Phalaborwa	Yes	0-10 years		Yes	Maputo Harbour	<ul style="list-style-type: none"> <li>Limited reserves left</li> </ul>
Diamonds	n/a	Alldays	Yes	0-50 years		No		
Iron Ore		Thabazimbi	Yes	0-20 years		Yes	Witbank & Vereeniging	<ul style="list-style-type: none"> <li>Long term survival of area is affected by limited reserves</li> </ul>

Source: NATMAP Limpopo Province, October 2008

All in all a comparison between the two databanks were not straightforward and therefore the freight volume projections onto the network were done to enable a sensible comparison. Unfortunately detail commodities could not be compared, but only reported.

Table 2-9: 2006 and 2011 Freight Data Bank Surveyed Commodities

2006 COMMODITIES		2011 COMMODITIES	
CODE	DESCRIPTION	CODE	DESCRIPTION
A	Agricultural Products	A	Agricultural Products
B	Bags / Sacks	B	Bags / Sacks
C	Cement / Coal	Bb	Break Bulk
D	Drinks / Beverages	Ce	Cement
F	Fuels	D	Drinks / Beverages
I	Iron / Steel	T	Container
K	Chemicals	K	Chemicals
M	Machinery / Vehicles	E	Empty
O	Other	F	Fuel
P	Perishables	I	Iron / Steel
R	Rock / Stone / Ores	L	Livestock
S	Sail / Tarpaulin	M	Machinery / Vehicles
W	Wood / Timber / Lumber	P	Perishables
		R	Rock / stone / ores
		S	Sail / Tarpaulin
		W	Wood / timber / lumber

Map 2-10 and Map 2-11 shows the 2006 and 2011 commodity movement on the freight corridors respectively as determined by the associated freight databanks.

The main commodities transported on average on these corridors as described in the 2006 freight databank are:

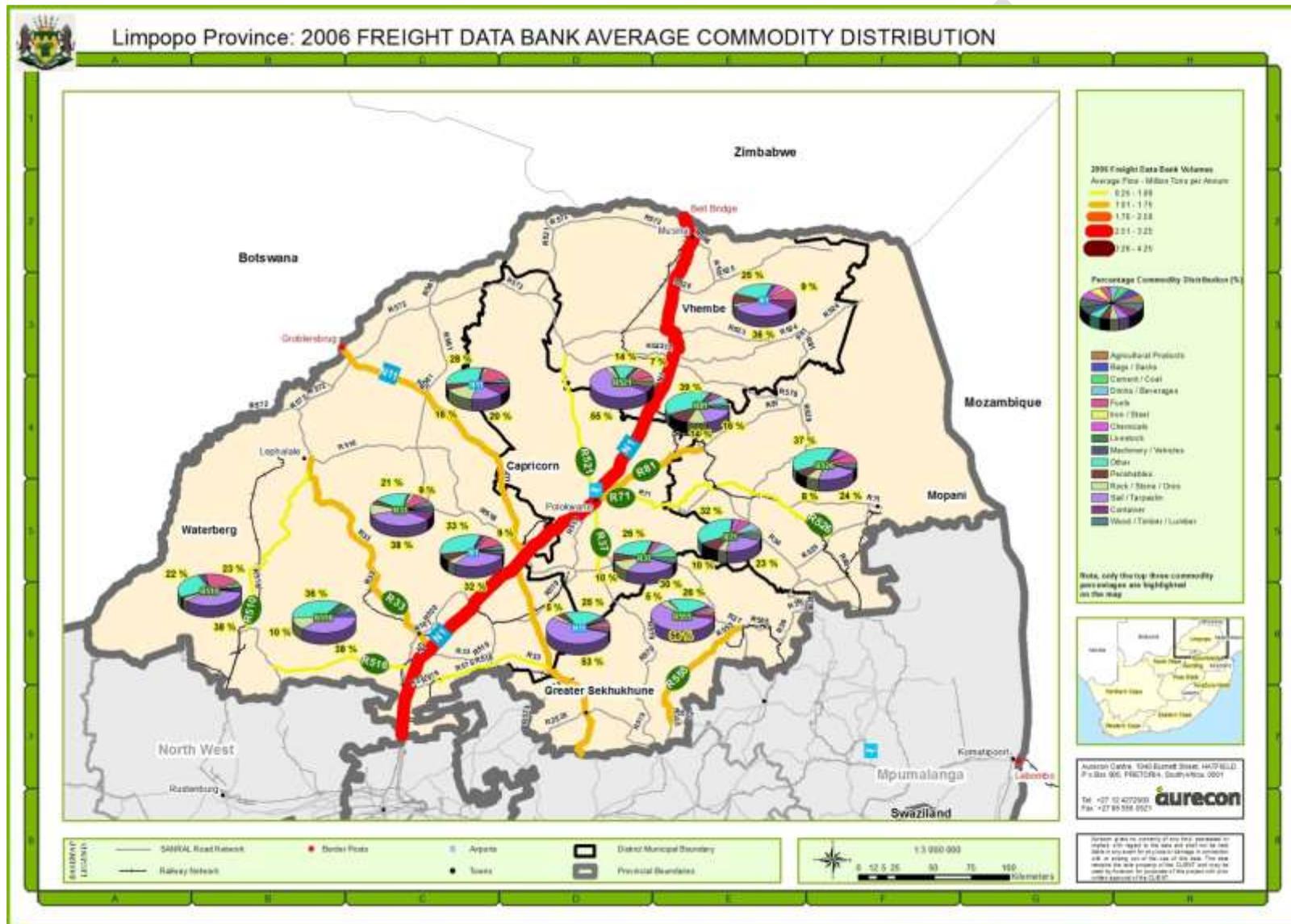
- Sail/ tarpaulin;
- "Other";
- Fuel; and
- Rock/ Stone and ores.

The main commodities transported on average on these corridors as described in the 2011 freight databank are:

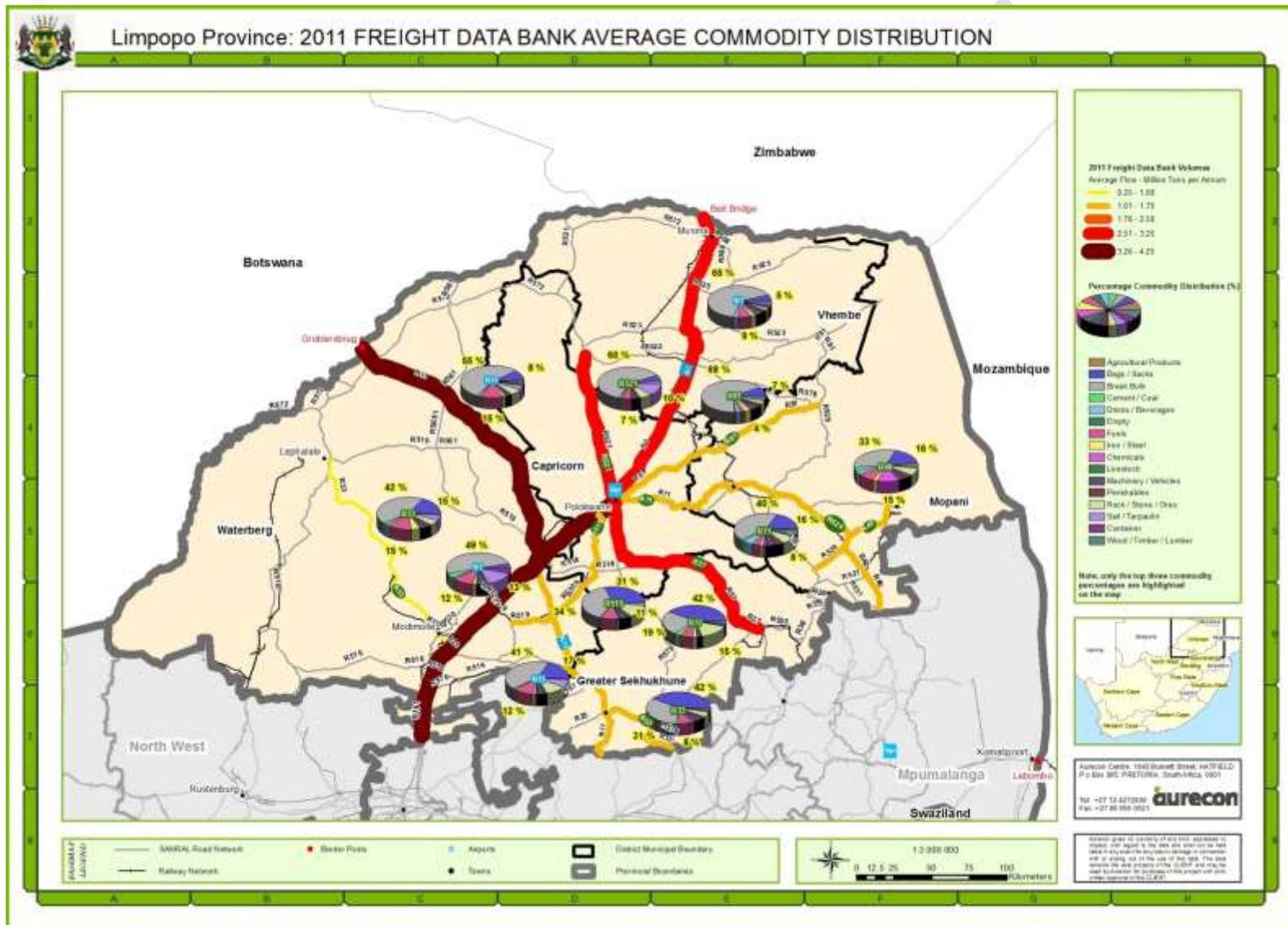
- Break bulk;
- Fuel;
- Bags/ Sacks; and
- Rock/ Stone and ores.

Changes in commodity movement are directly dependant on demand (provincial and international) and land-use changes. Unfortunately a direct comparison between the 2006 and 2011 freight databank is not possible, but it can be said that fuel and rock/ stone/ ores features in both data sets as being one of the top commodities being transported on the main freight corridors in the province as can be seen on Map 2-10 and Map 2-11.

Map 2-10: 2006 Freight Data Bank – Average Freight Volume Flow and Commodity Distribution in Both Directions



Map 2-11: 2011 Freight Data Bank – Average Freight Volume Flow and Commodity Distribution in Both Directions



### 2.3.2 Future Natmap Projected Freight Traffic Volumes

The National Transport Master Plan (Natmap - 2009) developed a comprehensive model of the freight transport systems of the country that has been created from available data, covering ports, road corridors, rail corridors, pipeline transport and air cargo. The information has been collected from a variety of sources, including:

- Rail freight data was obtained from Transnet, covering all movements for the financial year 2005;
- Road freight data was collated from the 2006 Limpopo databank and then adapted and updated with industry information, press reports, road count information and import-export data;
- Ports information was obtained from Transnet National Ports Authority (TNPA) for all commodity movements through all ports for the period 2003 -2008;
- Pipeline data was obtained from Transnet for 2006 and was adapted from press reports for envisaged developments; and
- Air Cargo information was been obtained from Airports Company South Africa (ACSA) and various sources.

The information was integrated into a model of the national freight system where the origins and destinations of cargo movements were defined into a national matrix of 145 areas (zones) covering the whole country and include transport to and from neighbouring states.

Furthermore a system of 14 major commodity groups was used for the land transport modes in order to make the model manageable and to provide comparability between modes. The commodity groups included:

- |                           |                           |
|---------------------------|---------------------------|
| 1. Agricultural products; | 8. Containers;            |
| 2. Grains and cereals;    | 9. Cement;                |
| 3. Crops and Fruit;       | 10. Iron and Steel;       |
| 4. Wood and Timber;       | 11. Machine and Vehicles; |
| 5. Beverages;             | 12. Coal;                 |
| 6. Chemicals;             | 13. Rock and Ores; and    |
| 7. Fuel;                  | 14. Others.               |

The NATMAP freight transport analyses were based on national commodity and major route volumes only – movement of goods between Provinces is therefore not illustrated. Furthermore, the NATMAP process also excluded urban distribution tonnage and the short haul rural freight movement. The emphasis of the NATMAP Freight Transport Model is therefore on the main commodity groupings and major national corridors and parallel provincial routes.

Outcome of the NATMAP Freight Transport Model for the Limpopo province per mode is presented in the following section.

### 2.3.3 Road Freight Transport

Phase 3 of the NATMAP provided an integrated Infrastructural Plan for the Province that encompassed the road, rail and air mode.

The methodology used to determine required service capacity for passengers and freight operations as well as bottlenecks on provincial and national roads was transport demand modelling (EMME2) and first-order network assessment (FONA). The FONA process produced the following road traffic, presented in Table 2-10.

Table 2-10: FONA Highest Trafficked Roads within Limpopo

ROAD CORRIDOR	HIGHEST TRAFFICKED ROADS WITHIN LIMPOPO		
	MINIMUM	AVERAGE	MAXIMUM
N1	102	1 191	2 366
N11	74	442	1 381
R101	43	143	882
R71	43	117	427
R528	43	98	427
R573	102	141	256
R511	43	73	192
R518	43	63	192
R25	102	102	102
R520	102	102	102
R533	102	102	102
R555	102	102	102
R519	102	102	102
R521	43	63	102
R510	43	89	102
R516	43	89	102
R33	43	81	102
R561	43	71	102
R36	43	51	102
R37	43	51	102

Source: National Transport Master Plan: Limpopo Chapter (October 2009)

Traffic growth patterns are envisaged to take place at the following areas:

- the N1 section between Gauteng and Polokwane;
- the N1 section between Polokwane and Makhado; and
- the N11 section between Mokopane and Groblers Bridge.

The road freight volumes handled in Limpopo are also expected to increase over the 45 year period. Table 2-11 presents the 2010 to 2050 road freight projections in the Province, with the 2010 and 2030 road freight movement depicted in Map 2-12 and Map 2-13 respectively.

Table 2-11: Current and Future Movement of Road Freight in Limpopo

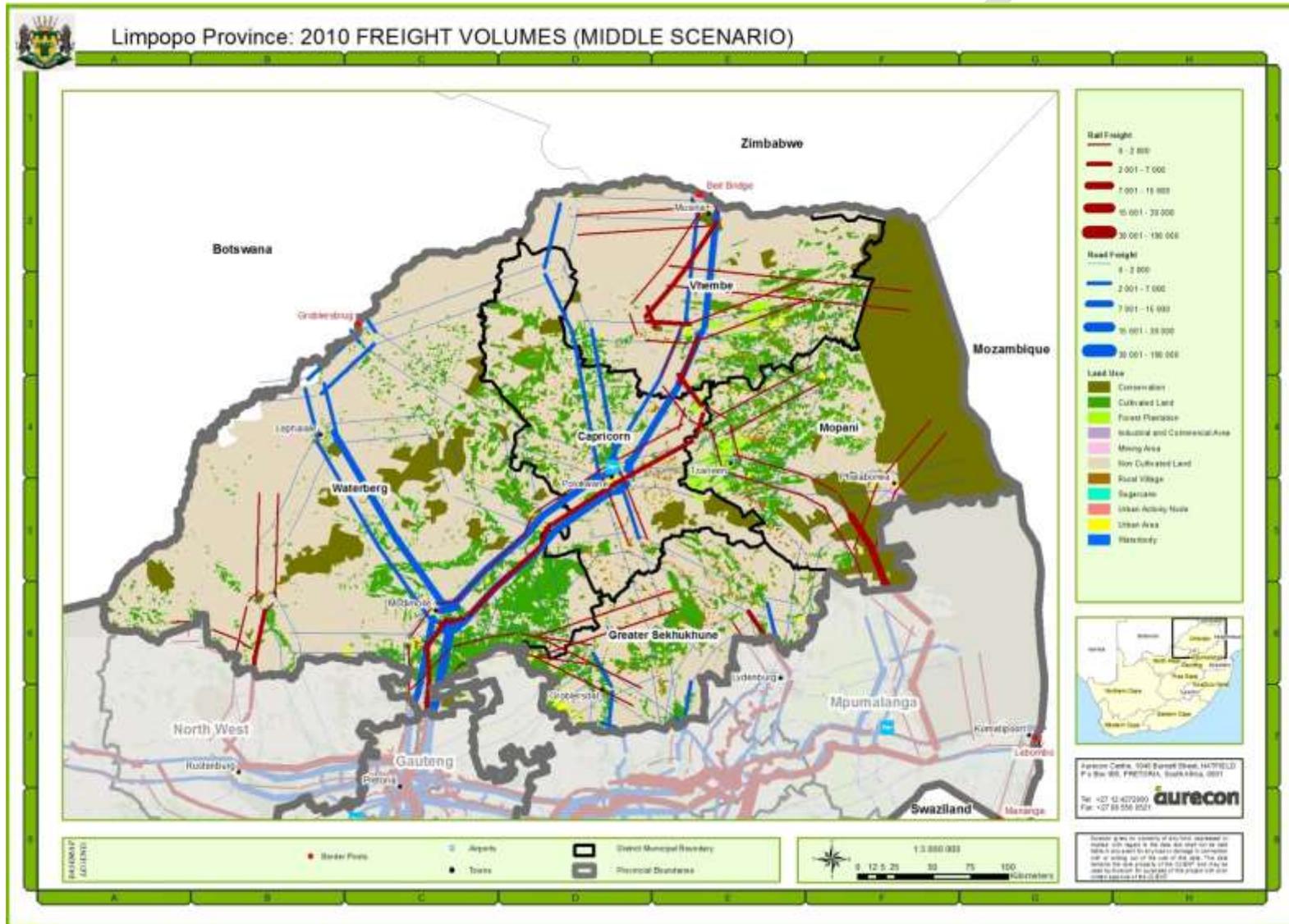
Road Corridor	ROAD FREIGHT VOLUME (million tons)		
	2010	2030	2050
N1	9.8	<20	
N11	2.2	<5	
Provincial Routes	<1.0	<5	

Source: National Transport Master Plan: Limpopo Chapter (October 2009)

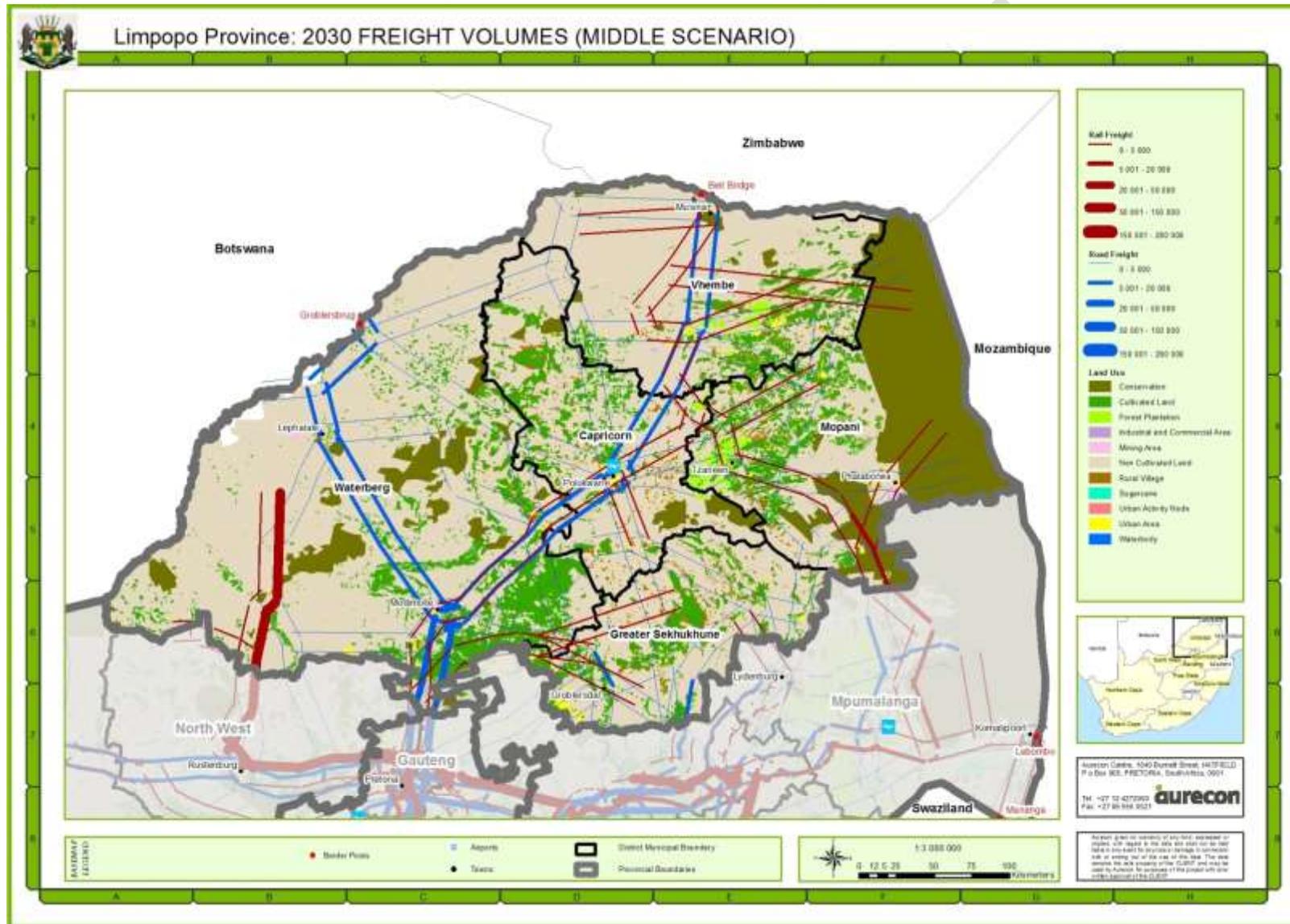
## Conclusion

It must be noted that the significant role of the R33 is visible from the Natmap projections. This is in line with the expectation when taking into account the Lephalale (future) coal mining activities and the surrogate role that road transport would have to fulfil in absence of a sufficient rail system until such time that the rail capacity needs the demand.

Map 2-12: 2010 Predicted Natmap Freight Volumes



Map 2-13: 2030 Predicted Natmap Freight Volumes



### 2.3.4 Rail Freight Transport

This section presents the future projected rail freight in the Province. Coal is currently said to be the main rail freight driver in the province. It is envisaged that the situation will remain even in the coming years. It is forecasted that in the coming 20-30 years about 80 million tons per annum of coal will be produced in Lephalale and Botswana. An additional annual volume of 20 million tons is predicted will come from the Northern coalfields towards the Zimbabwe border. Refer to Map 2-9 for the location of the coal reserves.

The current status of railway in Limpopo will not be able to meet this demand. The coming enormous flows of coal from Limpopo will throw a great deal of extra demand on a network that is currently struggling to keep up with current demand. New rail lines are therefore required to meet this demand. It is also envisaged that if the new rail lines are not constructed on time, the Limpopo road network will be expected to handle this freight volume increase.

It is also forecasted that eMalahleni (Witbank) coal fields in Mpumalanga will go into gradual production decline as coal runs out. Limpopo coal fields is predicted will replace them in supplying South Africa's needs as well as that of exports and thus will come into production at a faster rate.

The following observations are made from Map 2-9:

- The Limpopo coalfields will in due course supply the whole of South Africa and not just the flows to Richards Bay—thus these mining areas (fields) need to be connected to the whole network;
- The northern coal fields are smaller but collectively still substantial;
- None of the Northern fields have direct rail services and will need to either feed coal by road to railheads or have branch line connectors constructed;
- It should be noted that these rail routes are prone to variable standards and it needs to be clearly understood that the freight flow on any route is a product of the Lowest Common Denominators of all these factors combined;
- As an example Lephalale currently supplies coking coal to Saldanha bay and the line power supply from Beaufort West to Cape Town has a direct bearing on the size of train that can be handled on the whole route (in this case trains are split in half at Beaufort West which makes for slow running and extra cost). This very route is also prone to many locomotive changes;
- Slow running means that more wagons and locomotives are needed to carry the same tons and if rolling stock supply is limited then less tons are carried—which in turn lessens the capacity of the railway line or the mining product is rather transported via road; and
- On the Botswana side of the border west of Lephalale are further massive coalfields which offers an opportunity for South Africa to also transport as a bid to generate employment and revenue for the country. This will mean a need for a feeder rail or road network stretching into Botswana.

Map 2-14 to Map 2-18 provides details of the railway line variability situation countrywide. These variability characteristics impacts on the anticipated demand for coal transport in future in Limpopo.

- Map 2-14 presents the Axle Load Maxima of the rail network. The following conclusions are made:
  - The payload of wagons is directly affected by axle load capabilities of track — refer to Table 2-12 on the coal line specifics; and
  - 20 ton axle load wagons can carry about 60 tons whereas 26 ton axle load wagons can carry about 84 tons - this is significant for the anticipated demand.

- Map 2-15 specifies the Traction Modes of the rail network. The following observations are made:
  - At each change in line colour traction must be changed;
  - It should be noted that in many cases the terminal end points only have diesel locomotives therefore further locomotive changes is needed;
  - Not all locomotives have the same power rating so train size must be adjusted or wagons dropped off; and
  - It should be noted that this process happens all over again on the empty backhaul.
- Map 2-16 presents the Ruling Gradients (Heavy Direction) of the rail network. The following observations are made:
  - Low gradient ratings mean steep or curvy routes where either more locomotives are needed or fewer wagons pulled; and
  - Note that Lephalale to Richards Bay is, relatively speaking, flatter than the Musina to Pretoria line, but still has a steep section around Rustenburg.
- Map 2-17 presents the Slot Usage of the rail network The following conclusions can be made:
  - The Richards Bay line has a major bottleneck in the form of the Overvaal tunnel (there are others but less severe); and
  - The Lephalale line to Pretoria is currently getting closer to capacity, largely as a result of short and too few passing loops in the section between Lephalale and Thabazimbi; and
  - It should be noted how underutilised most of the rail network currently is.
- Map 2-18 presents the Maximum Train Length of the rail network. The following observations are made:
  - Train length maxima is a complicated mix of brake system, passing loop length, gradient, locomotive power and coupler strength;
  - It is constantly being reviewed and upgraded;
  - As an example the Matlabas loop between Thabazimbi and Lephalale can only take 50 wagons. Thus one long train can pass one short train, but two opposing long trains cannot pass and as a result only one train at a time is permitted. In essence longer trains may mean less line capacity.

Map 2-14: National Rail Network Axle Load Maxima



Map 2-15: National Rail Network Traction Modes



Map 2-16: National Rail network-Ruling Gradients Heavy Direction



Map 2-17: National Core Rail Network- Slot usage



Map 2-18: National Rail Core Network-Maximum Train Length in Metres



Note: The above map should be used only as a guide and not be used as a reference map.

Table 2-12 details the current state of the bottlenecks on the whole line from Lephalale to Richards Bay. From Table 2-12 the following observations are made:

- It will be noted how variable the sections are at the moment;
- Given that enough wagons and locomotives exist it will be noted that the combination of lowest common denominators provide a current capacity of just 3.4 million tons;
- It should be noted that about 80 million tons per year will be required for the whole line — fortunately not all at once;
- A series of progressive improvements over time will allow the existing line to substantially improve capacity; and
- It should be noted that a whole new section will be needed from Lephalale to connect directly to the Richards Bay line as in due course as the current line will not carry the full required volume.

It has been stated that it will be necessary to feed the northern coal field product into the network and that it will, in due course, be necessary to construct a new line from the Lephalale area. It has been further stated that the disused branch lines in the province may have a role to play in the form of being reconstructed as dedicated freight haulage roads from sources to railheads.

Table 2-12: Bottlenecks on the whole line from Lephalale to Richards Bay

Lephalale and Botswana to Richards Bay								
Current state and upgrades								
Period	Item	Section				Lowest Common Denominator	Annual Capacity	Remarks
		Lephale to Thabazimbi	Thabazimbi to Pyramid	Pyramid to Ermelo	Ermelo to Richards Bay			
<b>Now</b>	axle load	20	20	20	26	20		4 axles a wagon--58 tons payload a wagon at 20 tons an axle
	Traction system	diesel	25 kv AC	3 KV dc	25 kv AC			8 changes in one round trip
	Max wagons per train	80	80	100	200	65		can have bigger trains but enroute breaking up needed
	slots a day	3	6	5	1			Coal line restricted by Witbank coal flow
	Ttl wagons a day	240	480	500	200			Restricted by slot availability and train size
	Signal system	RTO	RTO	CTC	CTC			Mixture
	Days operation a year	290	290	290	290	290		Maintenance and holidays and accidents.
	Ruling Gradient	14	9	12	12	9		Steep sections around Rustenburg
						<b>3 364 000.00</b>	<b>Subject also to rolling stock availability</b>	
<b>Intermediate</b>	<p>There are many individual steps that can be taken to gradually increase capacity on the line overall by debottlenecking sections starting with the worst offenders            But there will come a time when all these steps have been taken and the existing lines have reached maxima            Then it will be necessary to insert a completely new section of track from Either Lephalale or Thabazimbi to Ermelo            The province should argue that the new section also allows Northern coalfield flows to join this line</p>							
<b>End state aim</b>		Lephale to Thabazimbi	New Section Thabazimbi to Ermelo	Ermelo to Richards Bay				
	axle load	26		26	26	26		Standardise at heaviest
	Traction system	25 kv AC		26 kv AC	25 kv AC	25 kv ac		No loco changes on round trip
	Max wagons per train	200		200	200	200		one size train goes whole way
	slots a day	17		17	17	17		push smaller trains to existing or other track
	Ttl wagons a day	3400		3400	3400	3400		to equal demand
	Signal system	CTC		CTC	CTC			Upgrade and densify as required
	Days operation a year	290		290	290	290		Maintenance and holidays and accidents.
Ruling Gradient	14		12	12	12		ruling gradient of 12 for whole laden journey	
						<b>78 880 000.00</b>	<b>Subject to rolling stock availability</b>	

*Map 2-19: Rail Requirements for Limpopo to Service Coal Mines*

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## Conclusion and Proposed Rail Requirements for Limpopo

The strategy proposed for Limpopo's rail network is detailed as follows.

Railways should be designed and installed as a series of tracks that dovetail together and provide a common consistent route that permits standardised trains to flow one after the other in both directions. Regrettably most of them are not and as a result trains are not standard and line capacities vary greatly.

The coming enormous flows of coal from Limpopo will throw a great deal of extra demand on a network that is currently struggling to keep up with current demand. The eMalahleni (Witbank) coal fields will go into gradual production decline as coal runs out. The Limpopo coal fields will replace them in supplying South Africa's needs and that of exports and will come into production faster than the rate at which the Witbank fields decline.

The railways of Limpopo will not be able to meet this demand-as currently constructed. If upgraded or new railways do not arrive in time then the Limpopo road network will be expected to handle this volume increase. Mpumalanga experienced exactly the same situation and as a result the regional roads went into serious decline and some became impassable. To arrest this decline the province has had to spend millions of initially unbudgeted money and in fact the province has never caught up and remains in serious trouble.

The following comments and recommendations are made with regards to Limpopo's Rail network:

- The volumes that Limpopo will experience over the coming 20 to 30 years will be of the order of 80 million tons per year from Lephalale and Botswana and about 20 million tons a year from the Northern coalfields;
- The coalfields of the springbok flats are of debateable quality and may never be exploited in current form but may produce gas and the province should have a rail strategy to deal with coal from that source if it materialises;
- The absolutely central key to the whole freight strategy of Limpopo is preparing for the massive tidal wave flow of coal in a province where currently most rail freight flows are small in comparison to the anticipated demand;
- A cohesive provincial policy is essential to provide specialised coal haul roads and to ensure Transnet delivers a proper modern and timeous rail service. This must establish the foundation of the province's freight strategy for the next 20 years; and
- Maintaining freight roads in a decent state is a part of the process as well.

Map 2-19 shows the collection of changes or potential changes envisaged in the province regarding coal mining reserves. It includes:

- The construction of a new coal railway line from Lephalale to connect to the main Richards bay line;
- The construction of three feeder line to link coal fields to main railway lines – two in the northern coal fields and one from Lephalale into Botswana; and
- The reopening and maintaining/ upgrading of three disused branch lines to service the coal fields in the southern part of the province.

### 2.3.5 Air Freight Transport

#### Air Freight Potential in Limpopo Province

As discussed in the freight transport trends section, Polokwane and Phalaborwa airports are the only two airports which currently contributing significantly to the air freight transports volumes of the province. Table 2-13 presents the air freight potential with a description at the available airports in the Province.

Table 2-13: Air Freight Potential at Provincial Airports

AIRPORT IN LIMPOPO	FREIGHT POTENTIAL	DESCRIPTION
Burgersfort	low	There is hardly any high-value freight in the area, unless significant beneficiation of platinum takes place like manufacturing of high-value products
Musina	low / insignificant	There is no high-value freight in the area and no future projections thereof
Thohoyandou	low	Very little expectation that high-value freight will be available unless agro-processing takes place in the future
Tzaneen	low	Very little beneficiation / manufacturing taking place to produce high-value freight in the area
Phalaborwa	low	Very little beneficiation / manufacturing taking place to produce high-value freight in the area
Lephalale	Limited	Lephalale's economy is envisaged to grow substantially in the next 20 – 30 years but none of the development is envisaged will bring high value freight
Hoedspruit	Limited	Courier type cargo envisaged
Polokwane	High	It is estimated that Polokwane International could attract about 3 600 tonnes of air freight per annum, which equates to about 45 flights by an 80-tonne freighter aircraft

Source: Limpopo Aviation and implementation Plan, 2010

From Table 2-13, it can be established that a majority of the Provincial airports have a low freight potential due to the unavailability and limited possibilities of handling high value freight at respective areas where they are located at. Freight potential would improve in these airports provided significant economic activity take place within the vicinity. These airports include Burgersfort, Musina, Thohoyandou, and Phalaborwa.

Lephalale and Hoedspruit airports have a limited freight potential due to the type of economic activity envisaged to occur in the future in the areas where they are located. Polokwane Airport on the other hand has high air freight potential.

According to the Limpopo Aviation and implementation plan, 2010, Polokwane International Airport (PIA) is the only airport in the Province with infrastructure suitable for air freight. It is

also said to have International status which is necessary to comply with customs requirements. This implies that all international air freight in the Province will have to be flown from and into PIA.

Air freight limitations that will need improvement at Polokwane International Airport include:

- Current economic production patterns in the Province indicate a low potential for air freight;
- The airports are served by smaller planes which limits air freight capacity as these planes were designed for commuter travel not freight movement;
- There is no established air freight market in the Province implying that there is no real demand for air freight. This is due to the unsuitable products or commodities produced in the Province, a weak market structure as well as proximity of the Province to Gauteng and OR Tambo International Airport.

### Feasibility Study for the Development Options for Polokwane International Airport

The Feasibility Study for the Development Options for Polokwane International Airport (April 2009) provided potential inbound and outbound cargo demand at the Polokwane Airport.

The following assumptions were used as a base of developing the options:

- Current fresh produce statistics were used to derive the base cargo tonnage for all fresh produce;
- Current tonnage carried by SAA Airlink were also an input;
- Mining, manufacturing and other sectors that are not traditional users of freight services are assumed to be potential customers once facilities are available;
- Cargo handling facilities and infrastructure are installed at the airport; and
- An annual growth rate of 2% was assumed for all commodities except for tomatoes (15% growth rate) and citrus (6% growth rate).

Furthermore to the above, the following analytical assumptions were made:

- 10% of the agricultural production will be exported through the airport starting in 2010;
- 10% of courier express deliveries couriered from Limpopo will pass through the airport;
- 5% of manufacturing, mining and other sectors tonnage will be exported from Limpopo; and
- Southbound cargo into the airport will grow from a 14% of the total outbound capacity in 2010, with a general increase of 2% per annum.

Further to the analysis the report also provided the following potential challenges:

- Efforts for economic development and transport infrastructure provision are not coordinated;
- Positioning strategy for the airport needs to be assessed – does the airport become a business hub like OR Tambo International Airport or does it remain a cargo hub;
- Sustaining the attractiveness of the route;

The above findings were used to develop the airport's development options, with cargo related presented in Table 2-14.

The final recommendations for further preliminary feasibility assessment include the implementation of a small new cargo facility with a new hotel, conference centre, commercial and retail.

The final risk assessment of the above recommendation indicated that:

- Gateway Airports Authority Limited will carry the primary risk for the development and maintenance;

- The risk is of high level; and
- The likelihood of mitigating GAAL's risk is low.

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Table 2-14: Cargo Development Option Analysis at Polokwane International Airport

DEVELOPMENT OPTION	PATH DESCRIPTION	ENVIRONMENTAL SCAN	KEY FACTORS TO CONSIDER
Small cargo handling facilities on existing site	New development inside airport perimeter	<ul style="list-style-type: none"> <li>• SAA Airlink bumping off cargo;</li> <li>• Mostly for rest of SA bound cargo</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive pricing against road transport;</li> <li>• Bigger and more airlines;</li> <li>• Belly cargo focus;</li> <li>• Airline operators with freight handling and forward capacity;</li> <li>• Better use of unutilised hangar space</li> </ul>
Major cargo handling facilities on the airside	New development at the entrance of the airport and outside airport perimeter	<ul style="list-style-type: none"> <li>• Severe competition from road freighting;</li> <li>• Cargo trends follow the direction of economically-downturn means decrease in cargo;</li> <li>• Most agricultural produce very bulky;</li> <li>• Most mining produce bulky and non-perishable – no beneficiation;</li> <li>• Transportation to ports and shipped;</li> <li>• Not economical, air-freighting too expensive;</li> <li>• Virtually no international freighting possible for other airports outside of ORTIA;</li> <li>• Dead legs on return international and African cargo freight flights;</li> <li>• Potential fresh product demand throughout the year</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive pricing with road transport;</li> <li>• Bigger and more airlines at airport to seek competition</li> <li>• Belly cargo and all-cargo freighting focus</li> <li>• International route – market development</li> <li>• Operate belly cargo in Africa to avoid dead legs;</li> <li>• Operate both belly-cargo and all cargo from European routes;</li> <li>• Have to have freight handling and forwarders based at the airport;</li> <li>• Needs to be driven as a provincial priority;</li> <li>• Needs significant provincial initiative implementation;</li> <li>• Needs government subsidisation; and</li> <li>• Long term focus</li> </ul>

Source: Final Report: Feasibility Study for the Development Options for Polokwane International Airport, April 2009

### 2.3.6 Conclusion

Overall there is significant growth in the freight that needs to be transported in future in Limpopo province by means of road, rail and air. Mining is the biggest contributor (especially coal) to freight transport demand via road and rail in future.

Infrastructure investment should be aligned to meet these future demands and freight operations activities should be optimised as this is critical to the overall success of freight transport in Limpopo province.

## 2.4 Identified Freight Issues

The Status Quo Report illustrated the significant growth in freight production and some of the constraints experienced with infrastructure developments and policies that facilitate freight logistics currently and that will have to be addressed in order to meet the future demand. These key freight transport gaps are presented in Table 2-15.

Table 2-15: Key Challenges per Cluster

CLUSTER	KEY CHALLENGE	DESCRIPTION
<b>Economic</b>	Diversification of the economy	<ul style="list-style-type: none"> <li>Limited promotion of industrialisation – particularly manufacturing;</li> <li>No intervention to widen and expand provincial industrial base.</li> </ul>
	High poverty levels as well as high unemployment rate.	Existing levels of poverty and unemployment restrains the tapping into the power of the new economy.
	Skills and capacity	Technical skills are scarce in the province, impacting on projects implementation
	Lack of coordination in planning.	Participation of relevant governmental departments during project initiation, planning and implementation.
<b>Institutional</b>	Lack of Integrated Planning	<ul style="list-style-type: none"> <li>Lack of coordinated corridor planning;</li> <li>Lack of planning between different expertise (economic planning, land-use planning, etc.) impacting on freight transportation.</li> </ul>
	Limited Freight Expertise	Lack of sufficient capacity to address freight transport issues.
	Lack of Freight Transport Information	Lack of freight transport data
<b>Legal and Policy</b>	Lack of guideline plans	Lack of policy guiding road infrastructure improvement
		Lack of coordination guideline between national, provincial and local spheres of government
		Lack of monitoring implementation of policies, acts and frameworks enacted at national and provincial level
		Lack of legislation limiting freight transport to designated routes
		Lack of legislation with the provision of incentives for mode shift from road to rail
		Lack of legislation compelling the provision of

CLUSTER	KEY CHALLENGE	DESCRIPTION
		dedicated lanes for trucks on freight transport routes.
		Lack of legislation regulating the gathering and dissemination of transport data by the National Department of Transport, provinces, operators etc.
		Lack of legislation providing for the implementation of the planning, institutional and regulatory recommendations made in the “NATMAP” report.
<b>Infrastructure</b>	Road	<ul style="list-style-type: none"> <li>• Contribution to wear, damage and externalities that is caused by heavy vehicles is not adequately considered in Limpopo;</li> <li>• Establish the actual road usage cost of different categories of vehicles, to determine the share of road costs that should be allocated to the operation of road freight vehicles;</li> <li>• Less than 35% of road network in the province is paved;</li> <li>• General lack of maintenance in all modes of transport. For roads in particular increases road user charges;</li> <li>• No dedicated fund for road maintenance and other transport corridors;</li> <li>• Lack of calibrated weighing equipment, knowledge and skills, enforcement and supervision to address the issue of overloading;</li> <li>• Lack of catering for specific needs of truckers in the provision of proper facilities such as truck stops; and</li> <li>• Excessive overloading on roads contributes to further deterioration of roads.</li> </ul>
	Rail	<ul style="list-style-type: none"> <li>• Underutilisation of rail infrastructure;</li> <li>• Presently freight transport mainly consists of road and rail, with limited intermodal freight.</li> </ul>
	Air	Airport infrastructure is underutilized.
<b>Operations</b>	Road	<ul style="list-style-type: none"> <li>• Overloading control contributing to deterioration of road infrastructure;</li> <li>• Border crossing processing requiring reviewing;</li> <li>• Lack of law enforcement;</li> <li>• Transport of hazardous materials challenges such as the lack of incident management system (IMS); and</li> <li>• Licensing of vehicles and drivers requiring</li> </ul>

CLUSTER	KEY CHALLENGE	DESCRIPTION
		reviewing.
	Rail	<ul style="list-style-type: none"> <li>• Loss of market share by rail freight;</li> <li>• Lack of rail services.</li> </ul>
	Air	<ul style="list-style-type: none"> <li>• The outcome of Polokwane International Airport as a cargo hub.</li> </ul>

The observed implications of freight transport gaps include:

- Policy Context;
- Lack of provincial traffic safety standards inhibits the movement of freight transport in Limpopo;
- Poor load control strategies exacerbates the deterioration of road transport systems;
- Lack of bilateral agreements to ensure efficiency at Border Posts hinders significantly on the development of freight transport in Limpopo:
  - Lack of co-ordination between National, Provincial and Local spheres regarding road transport planning, maintenance and operations in the province imply that there will be discourse in the identification and formulation of the main requirements for main freight transport routes in the province. Furthermore communication and coordination regarding the implementation for freight related projects with the relevant agencies;
  - Lack of legislation limiting freight transport to designated national corridors imply that tolling of provincial freight routes might need to be considered to recover the road user charges needed to keep up with secondary road maintenance.
- Lack of incentives for mode shift from road to rail implies that there will always be a mismatch between the type of commodity transported and the appropriate mode for transporting it. Furthermore, it will continue to create the imbalance of required for transport system investment;
- Lack of legislation persuading the provision of dedicated lanes for trucks on national freight transport routes Reduction in road traffic accidents caused by conflicts between cars and trucks due to operational characteristics;
- Institutional Context:
  - Absence of Freight transport framework at provincial level;
  - Freight Transport is coordinated at the national level through the NFLS and NFMF whilst there is no framework guiding freight transport planning and coordination at the provincial level;
  - Freight transport coordination structure is none-existent;
  - A coordination framework guiding interaction on freight related projects is needed to ensure all stakeholders interact in freight transport related matters;
  - Fragmented functions of roads between various levels of government;
  - Functions of roads provision between various levels of government is not at par with regarding to funding level as well as competency of resources; and
  - Strengthening regulatory framework implementation.

Regulatory framework for majority of freight transport aspects exist, with the formation of the necessary institutions to implement these frameworks existing. There is however a need to capacitate these statutory bodies to ensure regulatory mandate is achieved:

- Does the rail freight monopoly benefiting the freight industry?

Government owns the bigger portion of transport infrastructure as well as the service providers operating ports, railways excluding road freight. This has led to the monopolization of services provided, allowing service levels and tariffs regulation to achieve profit objective rather than customer satisfaction.

- Infrastructure:
  - Lack of provincial freight transport corridors hinders proper holistic strategic planning of infrastructure that support freight movement;
  - Lack of freight transport infrastructure, including intermodal facilities;
  - Network condition is acceptable, however this is not essentially all through the transport system especially the secondary transport network;
  - Overloading control is still inefficient, contributing to the deterioration of transport infrastructure; and
  - Inadequate maintenance budget hinders the provision of required standard and quality of transport infrastructure.
- Operational:
  - Loss of Rail Market Share results in lack of competitiveness within the freight transport sector;
  - Reduction in railway line capacity as well as operation efficiency means the railways become unattractive to freight transport customers,
  - Current overloading control operations are contributing to road maintenance problem;
  - Transportation of Dangerous Goods not comprehensive; and
  - Lack of efficiency at border post hinders freight operations.

## 3. Limpopo Freight Vision, Mission and Goals

### 3.1 Introduction

The current period is seen as a unique opportunity for Limpopo – the ‘heartland of Southern Africa’ – to position itself to be one of the prominent leader in economic growth and prosperity in the region.

The province’s ability to move produce efficiently, seamlessly and substantially through and within its jurisdiction is therefore considered to be fundamental in ensuring a competitive economy. It becomes imperative that the location of freight activity areas as well as the way they are moved – the modes, the type of vehicles, the routes or the time of day to making become optimised.

The purpose of this chapter is to outline freight transport vision, mission and goals as well as freight transport objectives that will aim to streamline freight transport planning and implementation in the province. Generally objectives for freight seek a balance between economic contributions, external factors and social considerations.

### 3.2 Freight Transport Vision and Mission

#### 3.2.1 Vision

The vision of the Limpopo Freight Transport Strategy outlines what the province wants to achieve and how it wants to be viewed with regards to freight transport. The following statement provides such a vision to which the province can strive:

***“A World Renowned Freight Transport System”***

#### 3.2.2 Mission

The National Freight Logistics Strategy contextualises their strategy with reference to the mission statement of the White Paper on National Transport Policy:

*“To provide safe, reliable, effective, efficient and fully integrated land freight transport operations and infrastructure which best meets the needs of customers at improving levels of service at an equitable cost in a fashion which supports government strategies for economic and social development while being environmentally and economically sustainable.”*

The fundamental purpose of the Limpopo Freight Transport Strategy is encapsulated in the following mission statement which aligns with the abovementioned national freight mission statement:

***“Optimised Freight Movement That Stimulates Growth”***

#### 3.2.3 Linkage to the LEGDP 2009 – 2014

It is important that the vision and mission of the Limpopo Freight Transport Strategy aligns with the Limpopo Employment Growth and Development Strategy (LEGDP) 2009 – 2014. Figure 3-1 illustrates the aspects that underpin the Limpopo Freight Transport Strategy that includes the vision, mission, LEGDP pillars, goals and key principles.

The strategy targets nine of the fourteen LEGDP pillars or key action programmes. The goals and founding principles are discussed in the sections to follow.

Figure 3-1: Limpopo Freight Transport Strategy Structure



### 3.3 Key Freight Transport Goals

This Freight Transport Strategy is being developed with particular focus on the role of the Limpopo Province as a coordinator, whose responsibility is to oversee (1) planning and protections; (2) building and maintenance; and (3) managing and regulating the use of infrastructure as well as freight operations.

In this context, the key goals of the Freight Transport Strategy are to:

- **Maintain and improve the efficiency of the freight transport system** – ensuring that the road and rail links, terminals and related facilities for handling and moving goods around the cities, towns and province are operating to their maximum efficiency to support Limpopo's continued economic growth;
- **Enhance the sustainability of the freight sector** - by planning and operating the freight sector in a manner that maximises public safety outcomes and minimises environmental and amenity impacts; and
- **Ensure the availability of sufficient capacity in the freight sector** – through the utilisation of existing capacity as well as building the needed capacity to ensure the implementation of the Freight Transport Strategy.

### 3.4 Freight Transport Objectives

In pursuing these goals and seeking to deliver a practical, long-term framework that will directly assist Limpopo's freight sector to serve the growing provincial, national and regional economies, the Limpopo Freight Transport Strategy adopts the following objectives:

- Facilitate the efficient movement of freight in Limpopo;
- Provision of appropriate priority for freight on the network;
- Optimise the use of existing network infrastructure;
- Improve the safety of all modes of transport comprising Limpopo's freight transportation system;
- Identify and protect freight network options where necessary to ensure future capacity, flexibility and certainty;
- Eliminate illegal and overweight vehicles;
- Plan and deliver new network infrastructure in a timely manner;
- Provide a policy environment that encourages private sector investment;
- Reduce freight transport related fatalities and serious injuries through design techniques and the application of the '4 E's – Engineering, Education, Enforcement and Emergency Response Strategies;
- Improve security of freight transport systems;
- Establishing transportation investment priorities for purposes of adequately funding of provincial freight systems;
- Enhancing the freight transport knowledge and skills base;
- Providing opportunities for early and continuous proactive stakeholder involvement; and
- Expanding access to freight transport information.

## 4. Achieving the Vision

The vision sets out a new freight direction for Limpopo for the next 20 years. The vision, which cannot be achieved through a single measure, requires an integrated approach with a package of measures.

For the strategy to work the integrated approach is underpinned by the key principles (sustainability, integration, safety and responsiveness) that support the overall vision of an affordable, integrated, safe, responsive and sustainable land transport system.

The diagram below illustrates the relationship between the vision, goals, key result areas and key principles that are set out in this strategy.

Figure 4-1: Limpopo's Freight Strategic Relationship Diagram



### 4.1 Key Principles

#### 4.1.1 Creating a Sustainable Land Freight Transport System

The land freight transport system in Limpopo is vital for economic and social well-being, but negative environmental can occur and need to be minimised or mitigated. Over the years there has been a significant investment in the land freight transport system. By effectively serving all modes in an integrated manner the land freight transport system can be highly responsive to change and provide access and mobility for goods movement.

#### 4.1.2 Creating a Safe Land Freight Transport System

Another key principle applied throughout this Strategy is that the land freight transport system should be safe. Equally, education and promotion are methods that can contribute to significant safety outcomes.

#### 4.1.3 Creating an Integrated and Responsive Land Freight Transport System

Creating an integrated land freight transport system means forming a package of complementary measures that work towards the Strategy's goals and vision, as well as integration of activities between transport agencies, between transport modes and policy development and application within and between regulatory agencies. This includes effective connections within the land freight transport system and also in other areas that impact on the way goods are moved. Providing a multi-modal land freight transport system with good interchange amongst modes provides a more flexible and responsive land transport system.

#### 4.1.4 Role of Freight Modes – Creating Transport Choices

This Strategy promotes an integrated multi-modal approach to meet freight transport needs. The intention is to enable choice in a way that encourages goods to travel in affordable, integrated, safe and environmentally sustainable ways that have as little negative impact. The Strategy recognises that planning processes in recent decades have favoured freight movement by road, often to the detriment of other modes, and seeks to redress the balance in order to achieve a more sustainable and robust transport system.

The approach to achieving the Vision is:

- to maintain and use the existing transport infrastructure efficiently, effectively and safely;
- targeted investment in infrastructure improvements (especially to support multi-modal options); and
- land-use patterns that support the provision of transport options.

#### 4.2 Key Results Areas

These guiding principles provide a set of values to help position the role of freight within Limpopo:

- Defining the strategic freight network and its operations;
- Providing suitable route provisions and arrangements for freight movement; and
- Identifying regional freight transport investment priorities.

#### 4.3 Limpopo Freight Transport Strategic Network

While freight has always travelled on shared transport infrastructure – the Limpopo Province has never identified a Strategic Freight Transport Network. This has in turn resulted in freight transport requirements not always given sufficient priority when new transport network capacity is planned and constructed.

Within this section the strategic freight transport network in Limpopo will be defined. A Freight Transport Strategic System is defined as the transport network over which the movement of freight will be encouraged.

The grouping of components of a network into different functional classes has been proven to be an integral part of network planning – allowing the classification of different components for easy network analysis and formulation.

The development of Limpopo's Freight Transport Strategic System followed a set of key requirements, namely:

- Existing freight transport routes;
- Freight activity centres; and
- Missing freight transport links.

##### 4.3.1 What is a Freight Transport Strategic System

A freight strategic network can be defined as: “a core network of freight routes integrated with and complementing Limpopo's existing mixed traffic network.” The Freight Transport Strategic System is therefore viewed as a network of core freight routes with sufficient capacity to carry the expected major flows of freight. The Freight Transport Strategic System would ultimately be expected to:

- have sufficient capacity for growth;
- have limited conflicts between passenger and freight traffic;

- minimise freight movements within the city of Polokwane where an alternative route is available, unless the ultimate origin or destination of the freight is in Polokwane; and
- include defined diversionary routes with the objective of ensuring availability whenever operators wish to use the network.

It is envisaged that the Freight Transport Strategic System will continue to evolve over time to reflect emerging regional, national as well as international logistics and freight network requirements.

#### 4.3.2 Development Criteria for Limpopo Freight Transport Strategic System

During the development of Limpopo's Freight Transport Strategic System a set of key requirements were used to guide its development:

##### Freight Routes Classification

With the functional classification system as a basis, the optimum allocation of segments of the local network to those authorities best suited for efficient delivery would be possible, and draft proposals to this effect are presented in the chapter. It is recommended that the proposed roads co-ordinating body carry out the allocation of administrative responsibility and delivery functions for these roads, and that financial allocations be tailored to this classification system. This approach would allow the total network to be managed more effectively for overall efficiency.

##### Freight Nodes Classification

The freight nodes include the areas where freight intermodal facilities are located – thus where freight transfer activities are concentrated. The larger component of freight nodes is the actual areas which generate freight trips. In Limpopo's case the three main nodes include agricultural, manufacturing and mining activities.

##### Efficient Operating Characteristics

The operational criteria used during the development of the Limpopo's Freight Transport Strategic Network include:

- volumes of freight currently utilising the link;
- projected future freight volumes;
- functionality within the network; and
- sustainability of the infrastructure for current and future task.

#### 4.3.3 Development of Limpopo Freight Transport Strategic System

The development of Limpopo's Freight Transport Strategic System followed a set of key requirements, namely:

- Strategic freight nodes;
- Existing freight transport routes; and
- Missing strategic freight transport links.

##### 4.3.3.1 Strategic Freight Nodes

##### Freight Activity Nodes

Strategic freight nodes are freight transport interchanges points that are inclusive of intermodal; overloading, border posts as well as freight activity centres. They broadly define key nodes where intense freight and logistics activity takes place. These centres may include

ports of entries, airports, rail yards, intermodal terminals, manufacturing activity, warehousing and distribution centres. Map 2-1 indicates the freight activity nodes in Limpopo province which is described in more detail in the following paragraphs.

Current freight activity nodes include:

- **Airports:** Currently there are two main airports that handle freight in the province namely Polokwane International Airport and Phalaborwa Airport. It should be noted that freight activity is predominant in Polokwane International Airport as it is strategically placed for easier access to the other transport infrastructure in the province. The Provincial Government of Limpopo has set aside about R5 Million for the development of freight logistic hub in Musina and Polokwane.
- **The ports of Entry (border posts):** There are two main ports of entry in the province where freight activity is prevalent this include Beit Bridge and Martins Drift border posts. These border posts are ports of entry for freight commodities imported to the province or country and exported to the neighbouring SADC countries. The N1 and the N11 are the main routes utilized for the movement of freight cargo across the borders.
- **Rail Yards:** There are three main rail yards that handle freight commodities in the province namely:
  - **Phalaborwa** – this yard dispatches over 15 trains a day from this point. Rock phosphate trains are made up into 75 wagon blocks while magnetite trains are marshalled into 58 wagon loads.
  - **Polokwane** - this yard handles about 10 to 12 trains per direction in addition to that it handles 40 wagon air brake trains transporting coal traffic from Musina. According to the Current Freight Data Bank, 2012, the large yard is not fully utilised at present, due to the reduction in general freight traffic;
  - **Thabazimbi**- this yard is situated adjacent to the former station. It is used to make up iron ore trains from the nearby Kumba mine. In normal circumstances, coal trains from Lephalale bypass the yard itself. An open loco service and stand-by area is located at the north end of the yard and both diesel and electric locomotives can be found here.

The main routes used to move freight vehicles to the intermodal facilities include N1, R36, R40, R510, R516, R555 Groenbult Kaapmuiden Rail line, Thabazimbi Lephalale Rail line and Polokwane Beit Bridge Main Rail Line.

- **Intermodal Facilities:** There is a lot of freight activity that takes place at intermodal facilities as various modes of transport converge to offload and onload freight commodities to be transported to different parts of the province, other provinces or outside the country. Three intermodal facilities exist in the province namely:
  - **Phalaborwa** – whereby an area adjacent to the station and yard is used for intermodal traffic which consists of skeletal tank containers and normal containers with export traffic;
  - **Polokwane** - An intermodal container terminal is situated in Polokwane and is the most busiest facility;
  - **Tzaneen** - whereby export fruit traffic has been loaded at this point and further development of this refrigerated container traffic can be expected.

The main routes used to move freight vehicles to the intermodal facilities include N1, R81, R71, R36, R40 and the Groenbult Kaapmuiden Rail line.



## Freight Generation Nodes

There are three economic sectors which primarily drive freight movement in the Limpopo. They include agriculture, manufacturing and mining.

Mining is said to be the major contributor to the provincial freight industry. It is also envisaged that the mining sector will still be the main driver for freight in Limpopo even in the future years to come.

The following paragraphs present current and future nodes within the three mentioned categories that contribute to freight generation in the province. Please note that this list was obtained from different sources and is not exhaustive, but that the objective is to present some detail about the clusters indicated on Map 4-2.

### Current nodes

- **Manufacturing Activity Nodes:** The main manufacturing freight activity centres within Limpopo Province include:
  - Granor Passi- Fruit juice manufacturing situated in Polokwane and Letsitele;
  - Bonanza furniture making in Polokwane and Lephalale;
  - Kanhym meat processing in Marble Hall;
  - Cement plant in Dwalboom;
  - Samncor smelting of chrome ore in Steelpoort;
  - Wegraakbosch Farm & Dairy organic cheese processing in Magoebaskloof;
  - Agro-processing areas in Modjadjiskloof (avocado oil), Politsi (avocado purée and fruit juice) and Hoedspruit (dried mango);
  - Rhodes Vegetable Products Limpopo is a major canner of tomatoes and sweet corn;
  - Enterprise Foods' emulsions and canning plant in Polokwane makes more than a million Vienna sausages;
  - Sasko (a large wheat mill in Polokwane) and six bakeries within the province; and
  - Mopani worm processing plant –Giyani.

The N1, R101, N11, R33, R510, R33, R81, R71 are mainly used to transport the manufactured commodities together with the Thabazimbi Lephalale, Polokwane- Beit Bridge and Groenbult-Kaapmuiden rail lines.

- **Warehousing and Distribution Areas:** The following companies provide warehousing and logistics services for freight commodities in Limpopo Province:
  - Double pack logistics and distributors in Polokwane;
  - Manica Africa (Pty) (Ltd)- Groblersburg border post, Tolwe;
  - Sarens South Africa (Pty) Ltd – Polokwane;
  - Supplemental Inv (Pty) Ltd – Polokwane;
  - Blue Sky furniture movers-Polokwane;
  - Messina warehousing- Musina;
  - Ntji Warehousing – Themba;
  - Associated Freight Services –Musina;
  - Valtran Trucking – Polokwane; and
  - Mactransco (Pty) (Ltd) – Polokwane.

Limpopo Province has clusters which promotes the movement of road and rail freight. These clusters serve as freight demand/drivers for freight movement in the province (**including mining areas**). They include:

- Platinum group mining cluster on the Dilokong Corridor;

- Coal mining and liquefaction cluster at Lephalale;
- Horticulture Cluster in Mopani and Vhembe districts, Phalaborwa and Trans-Limpopo Corridors;
- Red and White meat Cluster in all corridors and districts; and
- Forestry Cluster in Mopani and Vhembe districts.

### Future nodes

A number of mining, agricultural and manufacturing future growth opportunities have been identified within the province. This will subsequently result in spin off effects to future freight activity in Limpopo.

The **future mining activities** include:

- Increased platinum production near Burgersfort i.e. Maandagshoek and Winnarshoek;
- Proposed platinum mine in Lebowakgomo;
- Platinum mining PP Rust mine near Makopane;
- Copper mining in Spoedvel Mine;
- Tin mining in Marble Hall- Olifants Fields;
- Silver and gold mining in Phashaskraal;
- Kimberlite mining in Zebediela;
- Titanium near Tzaneen;
- Grootegeluk Coal Mine in Lephalale; and
- Coal mining in Waterberg Coal Field Basin.

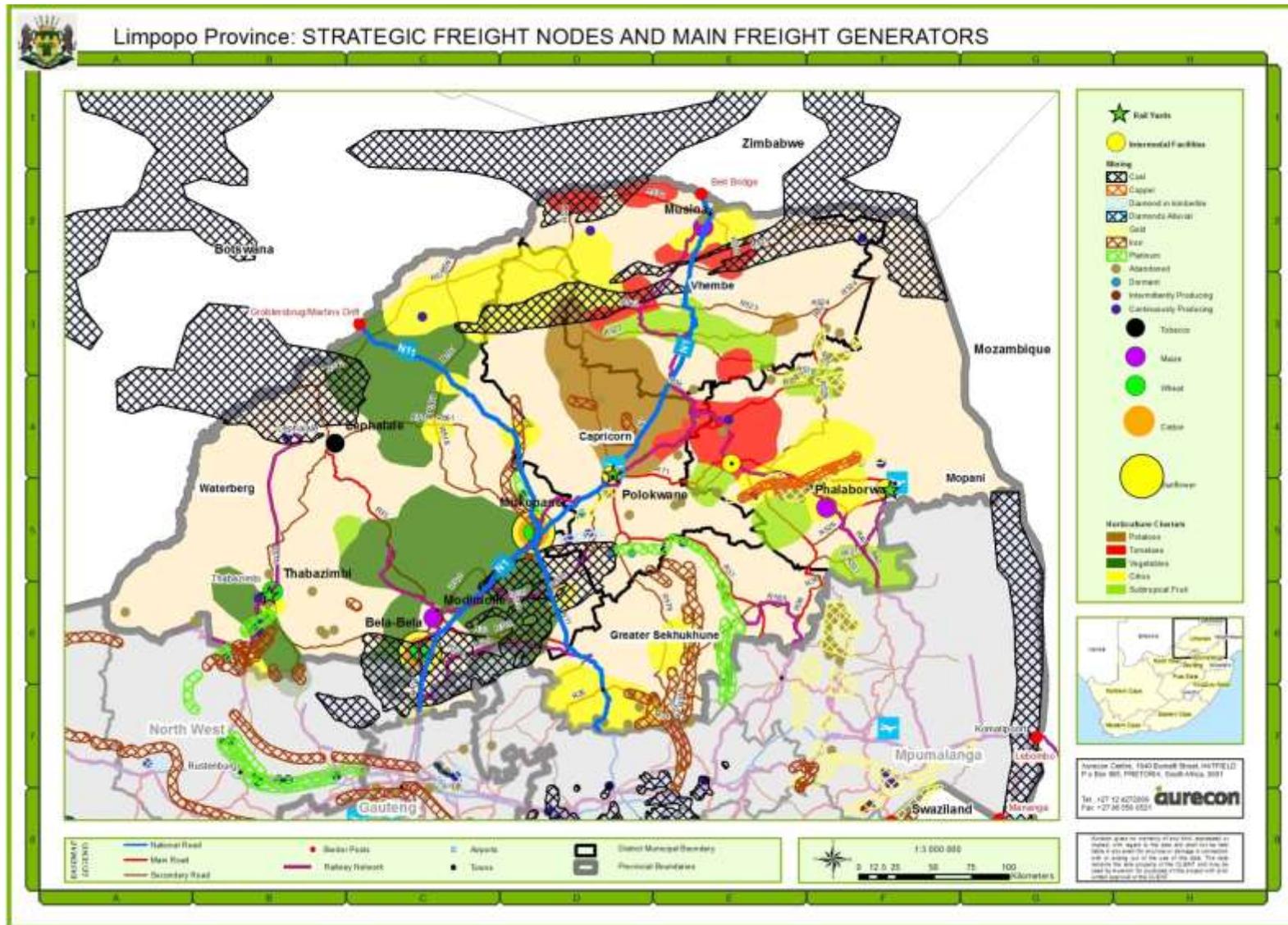
**Future agricultural activities** include:

- Trans-Limpopo Spatial Development Initiative (SDI) - Levubu Valley opportunities for peach, almond, macadamia and beef production;
- Dilokong SDI - Green production of cut flowers, baby vegetables, almond, peach, citrus and livestock production and Zebediela Citrus Estate;
- Phalaborwa SDI – avocado, papaya soft citrus production;
- Letaba Valley for production of mangoes, avocados and tomatoes;
- Thsivase /Midi tea growing in Vhembe;
- Fruit and vegetable production in Tzaneen; and
- Timber production in Tzaneen.

**Future manufacturing activities** include:

- Dilokong SDI – manufacturing of magnesium oxide, cement, lime based products and granite; and
- Phalaborwa SDI – agro-processing opportunities.

Map 4-2: Strategic Freight Nodes



#### 4.3.3.2 Existing Freight Transport Corridors

Map 4-3 indicates the national freight corridors situated in the Limpopo province as defined by NATMAP.

The identified freight transport corridors as indicated on the map include:

- The N1;
- R101 (parallel to the N1);
- the N11;
- R521;
- R510;
- R572;
- R71;
- R37;
- R573;
- R516;
- R524;
- R80;
- R40; and
- R555.

The only following missing freight links that does not form part of this national corridor map is a portion of the R526 linking the R71 and R40 and the R33 towards Lephalale. These two corridors were included in the freight databank and carries significant freight volumes.

#### 4.3.3.3 Strategic Freight Transport Network

From the national corridors (refer to Map 4-3) as well as the 2006 and 2011 freight databank volumes (indicated on Map 2-2 and Map 2-3 respectively), the Limpopo Strategic Freight Transport Network was determined and shown in Map 4-4. The Limpopo Strategic Freight Transport Network includes both road and rail corridors.

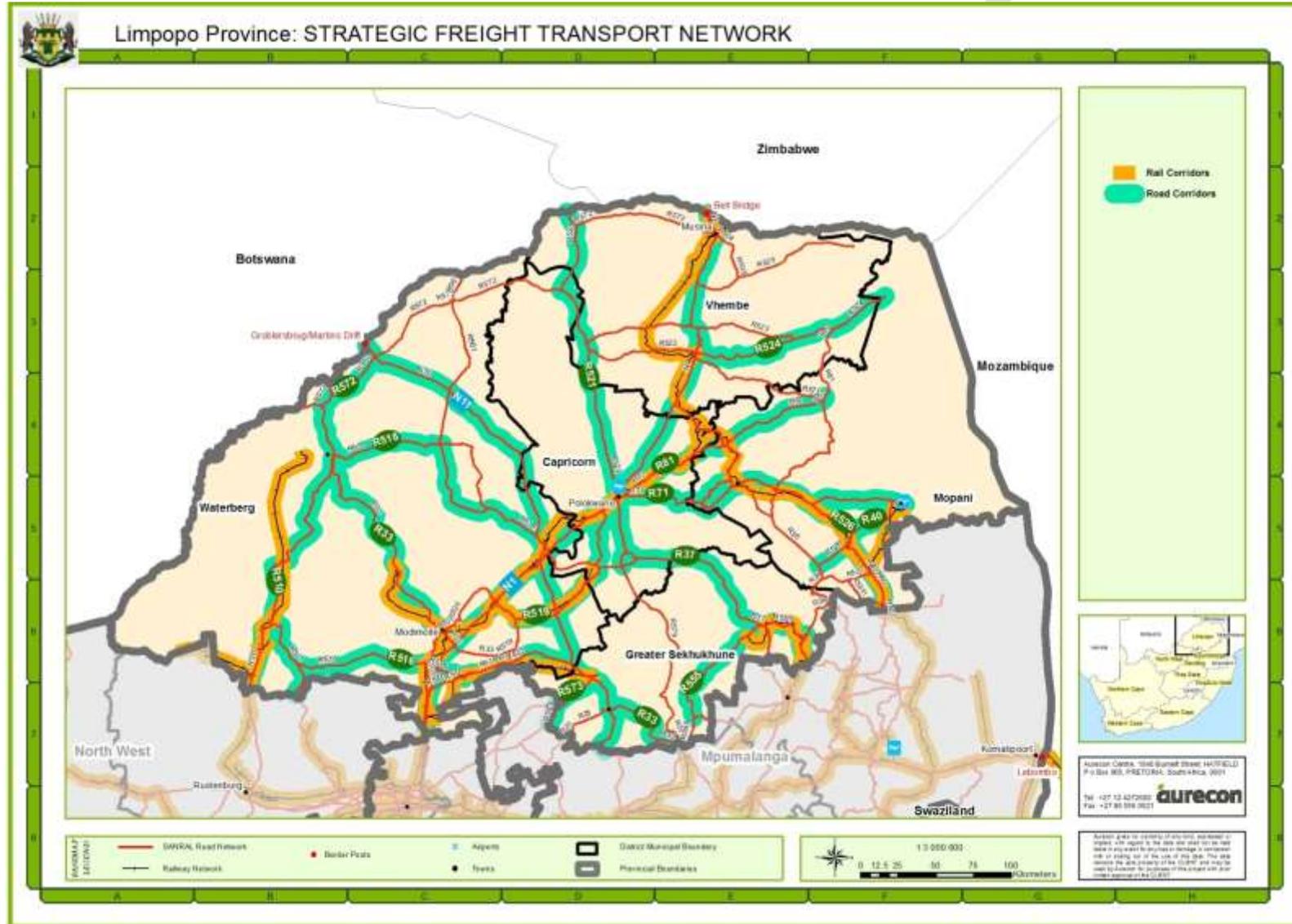
This also took into account the position of strategic freight transport nodes and freight generating clusters as indicated in Map 4-1 and Map 4-2 respectively. From this map it is evident that there are no obvious missing links on a strategic provincial level. Detail links that provide access to specific big freight generators, such as future mines, can be investigated by the freight forum (to be established) and possibly be implemented on a local government level.

Map 4-3: National Freight Corridors within Limpopo province



Source: NATMAP Limpopo Province, October 2008

Map 4-4: Strategic Freight Transport Network



## 4.4 Suitable Freight Route Provisions and Arrangements

### 4.4.1 Approach to Overloading Control

Overloading is a serious problem area that imposes an additional strain on the road network condition. Overloading also occurs due to excess demand for road freight transport emanating from lack of rail services. Currently there are eight weighbridges that are operational in Limpopo and four closed ones. They are mainly located on the National routes, N1 and N11 and Provincial Routes, R101 and R81. Table 4-1 present the traffic control centres (TCCs) operating in the province and their capacities. Map 4-5 indicates the current operating weighbridges, the four closed weighbridges as well as the escape routes that heavy vehicles take to bypass the weighbridges as described in Table 4-1.

Table 4-1: Traffic Control Centres Operating in Limpopo Province

NAME	LOCATION	OPERATING HOURS	SYSTEM(S)	OPERATOR	ADDITIONAL FACILITIES	ESCAPE ROUTES
<b>Mantsole</b>	N1 (about 21 km North of Hamanskraal)	24 hrs	TRAFMAN/ WIM	Bakwena		Mckenzie/C yferskuil
<b>Zebediela</b>	N1 & N11 (about 10 km from Nyl Plaza toll gate)	24 hrs	TRAFMAN/ WIM	TRAC	Roadworthy Vehicle Testing	N11/R101
<b>Beit Bridge</b>	N1 (about 4 km to the border post)	24 hrs	TRAFMAN/ WIM	Bakwena	Roadworthy Vehicle Testing	
<b>Makhado (Mampakuil)</b>	N1 (about 10 km south of Makhado)	16 hrs 06:00-22:00	IGC	Province		R578/Vivo/ R101
<b>Polokwane</b>	N1 & R101 (about 10 km south of Polokwane)	24 hrs	TRAFMAN/ WIM	TRAC	Roadworthy Vehicle Testing	N1/R37
<b>Mooketsi</b>	R81 (about 700m from Mooketsi junction)	14 hrs 06:00 - 20:00	IGC	Province		
<b>Rathoke</b>	N11 (about 10 km north of Marble Hall)	16 hrs 06:00 - 22:00	IGC	Province		D4100/D25 34/D27/D3 600/R33/se ttlers rd
<b>Groblersburg</b>	N11 (about 10 km to the border post)	16hrs 06:00 - 22:00	IGC	Province		R510/R572

Source: Limpopo Freight Data Bank (2012)

The following observations are made from Table 4-1:

- There are five Traffic Control Centres located along the N1 namely: Mantsole, Zebediela, Beit Bridge, Makhado and Polokwane;
- Two are located along the N11 namely Rathoke and Groblersburg and one on the R81 i.e Mooketsi;
- Mantsole, Zebediela, Beit Bridge and Polokwane are the most busiest TCC's and operate for 24 hours, while Makhado, Rathoke, Groblersburg and Mooketsi operate less than 24 hours;

- Mantsole and Beit Bridge TCCs are operated by the Bakwena Concessionaire; while Zebediela and Polokwane are managed by Trac; Makhado, Mooketsi, Rathoke and Groblersburg are operated by the District Municipalities;

#### 4.4.1.1 Traffic Control Centres (TCCs)

The busiest traffic control centres operate for 24 hours namely Mantsole, Zebediela, Beit Bridge and Polokwane, whilst Makhado, Rathoke, Groblersburg operate for 16 hours and Mooketsi 14 hours. As part of the operations at Traffic Control Centres, heavy vehicles are screened for overloading and vehicle fitness. Furthermore driver's license and vehicle licenses are checked for validity. The overload control and other road traffic enforcement is conducted by Limpopo provincial traffic. Additionally for TCCs located at border posts, the Cross-Border Road Transportation Agency performs the cross-border road transport operations strategically placed to prevent heavy vehicles from overloading the South African roads and those of the neighbouring countries. Roadworthy vehicle testing also takes place at some TCCs namely Zebediela, Polokwane and Beit Bridge. The roadside courts where local magistrates preside over cases of overloading transgressions are also located on the TCC sites.

#### 4.4.1.2 Traffic Control Capacity Issues

It has been observed countrywide that the current weighbridge network is underutilized. This is due to the shortcomings of overload control law enforcement which include:

- Severe shortage of manpower in law enforcement and overload control in particular;
- Inadequacies in training and shortage of skilled personnel to operate the weighbridges;
- Poor administrative support structures;
- Shortage in funds for overload control enforcement e.g. no overtime payment for traffic officers who work outside normal working works. A substantial amount of road freight is transported outside normal working hours;
- Lack of maintenance, upgrade of weighbridges and regular calibration contributing to the high percentage of weighbridges that are non-operational; and
- Limited enforcement of alternative routes resulting in weighbridges being bypassed.

Table 4-1 as well as Map 4-5 also presents the escape routes (routes mainly utilized to bypass TCC's) in Limpopo Province. They include:

- Mckenzie/Cyferskuil – Mantsole TCC;
- N11/R101 - Zebediela TCC;
- R578/Vivo/R101 - Makhado TCC;
- N1/R37 - Polokwane TCC;
- D4100/D2534/D27/D3600/R33/Settlers Road - Rathoke TCC; and
- R510/R572 – Groblersburg TCC.

It is proposed that overload control law enforcement be strengthened on these escape routes. Additionally to that a proposal is made that the following measures be applied so as to increase capacity at the TCC's:

- Introduction of regular calibration of weighbridges is required in-order to minimize the basing of overloading cases on technicalities in an attempt by offenders to try and avoid penalties in courts;
- Upgrading weighbridge scales to the type of scale suitable for the traffic on each particular route or corridor; and
- Extend operating hours of some strategic weighbridges such that they operate throughout the day.



#### 4.4.1.3 The use of Mobile Technologies to curb Overloading on Escape Routes

The existing provincial weighbridge network comprises primarily of fixed weighbridges which are not highly effective in controlling overloading that take place daily on the freight routes.

They are easily bypassed by using alternative routes, particularly on the secondary and tertiary road network, where little overload control enforcement is done. Transgressing transport operators are well aware of the limitations of overload control law enforcement and take advantage of the situation.

From Table 4-1 it is observed that four TCCs (Mantsole, Zebediala, Beit Bridge and Polokwane) make use of Weigh in Motion systems while the other four TCCs (Rathoke, Makhado, Grobelsburg and Mooketsi) utilise IGC weighing systems. It is proposed that all TCC's utilise weigh in motion systems as they have been proven in the first world countries to assist in effective overload control in the following ways:

- Pre-screening the vehicles in motion such that only vehicles suspected of overloading are sent to the weighbridge; this increases the proportion of overloaded vehicles vs. total vehicles weighed, and thus saves time for trucks as they are not required to stop unnecessarily;
- Improves the primary performance metric which is enforcement efficiency – measured by the number of overweight penalties issued per total number of trucks inspected, as officers can be monitored for effectiveness and productivity;
- Data collected with WIM systems can be used to schedule the time and location of enforcement activities; and
- In screening activities, the GPS devices can be a useful aid to minimise the number of escorts required to take the overloaded vehicle to the nearest weighbridge. Such devices are already being utilised at some weighbridges in South Africa.

It is also proposed that the use of portable weighing scales be explored as its use has the following advantages:

- They are light in weight and fully portable/mobile;
- They can be easily setup, operated and dismantled;
- They are sufficiently accurate and reliable;
- Can cover a large area for enforcement; and
- They present an element of surprise in overload control enforcement, such that overload transgressors cannot predict where and when a portable weighing scale has been set up and this in turn increases their risk of being caught.

#### 4.4.2 Border Post Provision in Limpopo

This section presents the gap analysis for Beit Bridge and Martins Drift (Groblers Bridge) Border Posts which borders South Africa with Zimbabwe and Botswana respectively.

##### 4.4.2.1 Beit Bridge Border Post

Currently Beit Bridge border post operates for 24 hours and handles approximately 292 vehicles on a daily basis. The average processing time for each vehicle is about 22 hours. This is due to the shortage of parking in the South African side which only accommodates about 180 vehicles (70 heavy, 10 buses and 100 light vehicles). Furthermore the lengthy processing time due to the duplication of paperwork to be processed on the South African side and Zimbabwean side contributes to the delays and congestion experienced at the border post.

Although it is difficult to currently pinpoint exactly how much of the delays can be attributed to the infrastructure, it goes without saying that a lack of parking facilities or a road network in bad condition around a border post will create a certain amount of delays.

The border post is barely coping effectively with the amount of traffic that it handles on daily basis. It is predicted that there will be a significant increase in traffic into and from Zimbabwe in the coming years when Zimbabwe's economic situation improves. It is forecasted that in 3 years to come about 1200 trucks will transit the border daily and the current border post infrastructure will not be able to handle the predicted demand (Federation of East and Southern African Road Transport Associations (FESARTA), 2009).

The following gaps (infrastructural, operational and institutional) have been identified as well as the proposed potential solutions for increasing efficiency at the Beit Bridge Border Post.

Table 4-2: Infrastructural Gap Analysis at Beit Bridge Border Post

INFRASTRUCTURAL GAPS	POTENTIAL SOLUTIONS
<p>Border Post Building Infrastructure</p> <p><b>South African Side</b></p> <ul style="list-style-type: none"> <li>• There are only 70 parking bays in SARS South bound parking lot; and</li> <li>• There is lack/shortage of space for infrastructure expansion.</li> </ul> <p>Road Infrastructure</p> <ul style="list-style-type: none"> <li>• The one-way road located South of the South African Border was not well designed and therefore cannot handle large volumes of traffic</li> </ul> <p><b>Zimbabwean Side</b></p> <p>The Southbound scanner is positioned too close to the border and adds to the congestion caused by vehicles waiting to cross the border Southbound</p>	<p>Improvement in infrastructure facilities and layouts to provide adequate capacity</p> <p>Demolish old buildings and extend parking lot; and Construct new building infrastructure further away from the border and move operations to the new premises.</p> <p>Road Agency Limpopo (RAL) must provide a well-designed dual lane one way system.</p> <p>Move the scanner away from the border to the new premises</p>
<p><b>Transport Infrastructure</b></p> <ul style="list-style-type: none"> <li>• The existing bridge is unable to handle the current flow of traffic effectively. Several lanes of traffic (private, commercial freight, empty returns, buses converge into one lane, in each direction to go over the bridge;</li> <li>• There is no free emergency lane other than using the old bridge</li> <li>• The bridge is rarely utilized due to uncertainty of its structural condition</li> <li>• Traffic is allowed onto the bridge in one direction, in batches and by vehicle class due to the congestion on either side of the bridge. Nothing is allowed on the bridge unless the far end is clear.</li> <li>• If an abnormal load is to cross the bridge, all other traffic is halted for long periods of time.</li> </ul>	<p>Build a completely new four lane bridge;</p> <p>Upgrading infrastructure on either side of the border</p> <p>Have the original old bridge structurally checked and repaired where necessary for safe crossing of all vehicle classes.</p> <p>Utilize original old bridge as the emergency lane</p>

Table 4-3: Operational Gap Analysis at Beit Bridge Border Post

OPERATIONAL GAPS	POTENTIAL SOLUTIONS
<p><b>24 Hour Operation</b> Insufficient movement of trucks through the border between 10 p.m. to 6 a.m. due to</p> <ul style="list-style-type: none"> <li>Few Agents work after 5 pm and even fewer after 10 pm. This affects the movement of documents amongst the authorities and the release of trucks to cross the border;</li> <li>Some drivers also down tools during these hours either because they have been given instructions not to work by their bosses or they choose not to</li> </ul>	<p>Importers, Exporters and Freight Forwards should consider the operation times when choosing agents at the border. Zimra has registered 300 agents, there is a good selection on the Zimbabwean side.</p> <p>Clarity must be sourced from transporters as to whether drivers are allowed to move at night; noting that the drivers do not have to drive on the main routes at night but to cross the border and sleep on the other side till dawn</p>
<p><b>Drivers</b> Behaviour and actions of some drivers negatively impact on traffic flow at the border post.</p> <ul style="list-style-type: none"> <li>Do not always park their trucks correctly in parking areas</li> <li>Every now and then they do not follow instructions correctly on where and how to park</li> <li>Not always available to receive releases or to move their trucks</li> </ul>	<p>Top management of transport companies must be well informed on border procedures and must take interest in their drivers activities at the border</p> <p>Law enforcement must also be strengthened at the border</p>
<p><b>Pre-clearance</b></p> <ul style="list-style-type: none"> <li>There are too many stops/checks payment points at the border e.g. customs, agriculture, veterinary, carbon tax, port health etc. which affect the flow of traffic particularly the vehicles that are pre-cleared should transit the border within a few hours.</li> <li>Not enough loads are pre-cleared particularly Northbound due to the number of days taken to clear goods through SARS at point of departure</li> </ul>	<p>All checks should be made at one location and at the same time</p> <p>The status of pre-clearance in both directions, must be clearly detailed and understood by all stakeholders</p>
<p><b>Border Management</b> There is no clear management structure on either side of the border</p>	<p>Agreement on a management structure. Furthermore, regular meetings with all affected institutions at the border to address roles and responsibilities in order to simplify cross border management process</p>
<p><b>Corruption and Smuggling</b></p> <ul style="list-style-type: none"> <li>Corruption and smuggling hinders the free-flow of traffic across the border</li> <li>Often done by syndicates which offer large financial packages to drivers and other on board staff</li> </ul>	<p>Improve border post operating procedures to minimise corruption opportunities</p> <p>Improve trade facilitation along the corridor route by involving all institutions involved e.g. customs, immigration, police, weighbridge authorities etc</p> <p>Transporters and agents should work together with customs, to track down smugglers</p>
<p><b>Monitoring</b> There is insufficient information regarding delays as well as their causes made available for decision</p>	<p>Monitoring mechanisms must be put in place to ensure the efficient operation of the border post</p>

OPERATIONAL GAPS	POTENTIAL SOLUTIONS
making	
<b>Traffic Control</b> Inadequate traffic control on the Musina-Beit Bridge road during busy roads	Closer working relationship between SARS and Limpopo Traffic should be encouraged
<b>Vehicle Inspections</b> Lack of efficiency within the Zimbabwe Vehicle Inspections Department for instance there is lack of coupons and huge delays are experienced at weighbridges	There should be clear procedure for vehicle inspections
<b>Management of Cross-Border Freight Operations</b> <ul style="list-style-type: none"> <li>Lack of coordination between SADC countries regarding Customs and Excise documentation</li> <li>Congestion and long queues due to insufficient personnel</li> </ul>	Co-operation with Customs & Excise on standardized customs excise documentation for freight operators in SADC countries Provision of sufficient personnel capacity to deal with heavy traffic volumes
Delays, congestion and lack of efficiency at the border post	Converting Beit Bridge Border Post to a One Stop Border Post. International Research recommends that Beit Bridge Border Post be converted to a one-stop border post in order to improve efficiencies and reduce delays. This will also facilitate the legal movement of commodities and people.

Table 4-4: Institutional Gap Analysis at Beit Bridge Border Post

INSTITUTIONAL GAPS	POTENTIAL SOLUTIONS
<b>Bilateral Road Transport Agreement</b> The existing Bi-Lateral road transport agreement between South Africa and Zimbabwe does not receive the attention required in-terms of the SADC Protocol on Transport Communications and Meteorology  Furthermore Zimbabwe is also a member of Comesa and complies with Comesa recommendations, this may create confusion as to which recommendations to conform to	Joint meetings between South Africa and Zimbabwe on transport operations between the two countries should be held regularly  The details of the agreements in place should be clarified and agreement reached, on which recommendations to be implemented in the two countries
<b>Accreditation</b> Accreditation is in place in South Africa, but does not adequately differentiate between those accredited and those not. Accreditation is not yet in place in Zimbabwe  Insufficient movement of goods is done through Electronic Data interchange (EDI)  There is no link between accreditation process and self-regulating Road Transport Management System developed in South Africa	Market accreditation as a regional initiative along the lines Authorised Economic Operator  Ensure more traffic uses EDI

#### 4.4.2.2 Martins Drift (Groblers Bridge) Border Post

Currently Botswana has two major commercial border posts linking it with South Africa, namely, Tlokweng and Martins Drift. The majority of traffic entering Botswana at Tlokweng is not SADC-bound but delivers goods mainly to Gaborone. Ninety percent of all commercial

vehicles entering and exiting Martins Drift are SADC-bound, in transit to Zimbabwe, Zambia and the DRC. From Martins Drift, vehicles traverse through Palapye, Francistown, Nata and Pandamatenga, exiting Botswana at Kazungula in the northwest.

Martins Drift Border Post operates for 16 hours (from 06h00 -22h00) handling about 126 heavy vehicles per day. The average processing time is about 8 hours. According to the SADC Road Operators study done in 2009 involving 37 transport company managers and executives, the major problems at Martins Drift Border Post include: 1) unfriendliness and attitude of SARS officers; 2) short staffed SARS officers; 3) shortage of parking at the border; 4) corruption and bribery; and 5) congestion and queues. These problems contribute to increased costs and delays and are experienced on the South African side of the border.

Table 4-5: Infrastructural Gap Analysis at Martins Drift Border Post

INFRASTRUCTURAL GAPS	POTENTIAL SOLUTIONS
South African Side Shortage of parking	Build more parking spaces subject to availability of land at the border

Table 4-6: Operational Gap Analysis at Martins Drift Border Post

OPERATIONAL GAPS	POTENTIAL SOLUTIONS
Management of Cross-Border Freight Operations <ul style="list-style-type: none"> <li>• Limited Operating Hours -16 hours</li> <li>• Lack of coordination between SADC countries regarding Customs and Excise documentation</li> <li>• Short Staffed SARS Officers who are unfriendly and rude to operators</li> <li>• Congestion and queues at the border</li> </ul>	<ul style="list-style-type: none"> <li>• Consider operating for 24 hours</li> <li>• Co-operation with Customs &amp; Excise on standardized customs excise documentation for freight operators in SADC countries</li> <li>• Provision of sufficient personnel capacity to deal with heavy traffic volumes</li> <li>• Provision of sufficient training of personnel to improve skills and knowledge regarding customer service, required documentation and customs and excise regulations for quicker and more efficient border post operations</li> <li>• Regular meetings with all affected institutions at the border to address roles and responsibilities in order to simplify cross border management process</li> </ul>
Corruption and Bribery	Improve border post operating procedures to minimise corruption opportunities Improve trade facilitation along the corridor route by involving all institutions involved e.g customs, immigration, police, weighbridge authorities etc.

The assessment of Martins Drift border post is very limited due to the lack of detail information regarding its operations as well as challenges thereof.

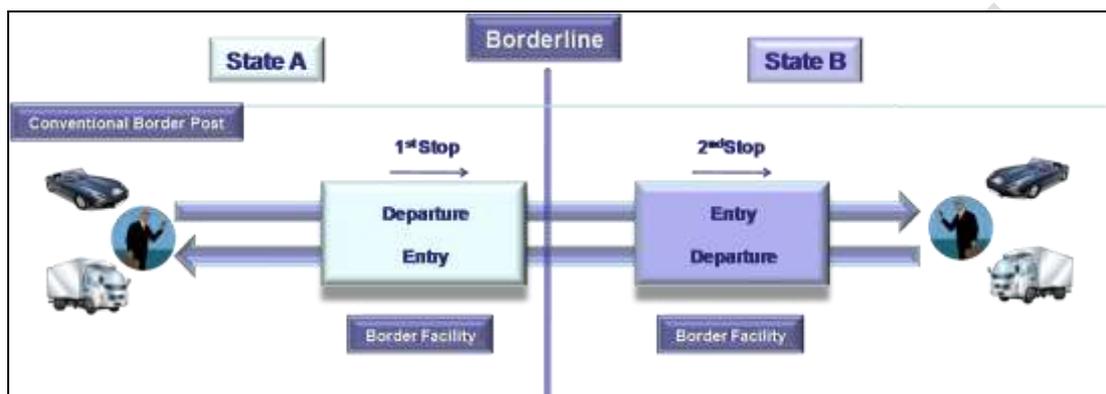
#### 4.4.2.3 Assessment of the potential Upgrade to One Stop Border Post(s)

The challenges experienced at Beit Bridge and Martins Drift border posts are said to be pinned down to the traditional design and layout of border posts (Lazenby, 2012).

According to (Lazenby, 2012), Government's research regarding the design and layout of border posts revealed a pattern showing that almost all border posts are either flanked by a mountain or river and were designed to form a funnel with narrow approaches, which channel all types of traffic to a single lane. This impedes traffic circulation in and around border posts.

A considerable amount of border posts in Africa operate as conventional border posts. Conventional border posts consist of border facilities belonging to each country on either side of the border as shown in Figure 4-2. This process consequently requires two stops to be processed by the officials of both countries concerned.

Figure 4-2: Layout of a Conventional Border Post



Source: East African Transport Strategy, 2010

Typically a border post will consist of officials from the different state agencies that deal with all the processes that need to be undertaken at the entry and exit points to the country. These are mainly police, immigration, customs, agriculture and health officials. In some cases officials from other agencies are also present on site. According to the Eastern African Community (EAC) Transport Strategy Study-border post analysis, the average processing time for heavy vehicles by each institution for border posts in EAC is presented in Table 4-7.

Table 4-7: Average Processing Time at EAC Border Posts

BORDER POST	PROCESSING TIMES IN MINUTES						
	CUSTOMS	IMMIGRATION	POLICE & SECURITY	*VET	**SPS/HEALTH	STANDARDS	TOTAL TIME
Malaba Ke	96	16	20	20	22	24	198
Malaba Ug	123	44	36	42	21	64	290-330
Busia Ke							
Busia Ug							1291
Katuna Ug	53	21	32	10	4	32	50-152
Gatuna Rw	54	20	18	3	0	14	109-120
Kanyaru Bu	56	23	5	0	0	7	91
Akanyaru Rw	97	49	54	0	0	0	200
Mutukula Tz	56	12	18	12	22	4	124
Mutukula Ug	41	27	15	0	12	21	107-115
Rusumo Rw	3	5	20	0	0	0	90-125
Rusumo Tz			20				50-60
Kobero Bu							58
Kabanga Tz							1502
Namanga Tz	66	19	16	16	18	16	4884

BORDER POST	PROCESSING TIMES IN MINUTES						
	CUSTOMS	IMMIGRATION	POLICE & SECURITY	*VET	**SPS/ HEALTH	STANDARDS	TOTAL TIME
Namanga Ke	71	9	5	4	10	12	111
Moyale Ke							
Moyale Su							
<b>Average Time Taken</b>	65	22	22	10	10	18	146

\*Veterinary inspections

\*\* The Agreement on the Application of Sanitary and Phytosanitary Measures (the "SPS Agreement") entered into force with the establishment of the World Trade Organization on 1 January 1995. It concerns the application of food safety and animal and plant health regulations.

The average access time for one heavy vehicle is as follows (refer to Table 4-7):

- Customs - 65 minutes;
- Immigration – 22 minutes;
- Police and security- 22 minutes;
- Vet – 10 minutes;
- Health – 10 minutes; and
- Standards – 18 minutes.

In total the average access time for 1 heavy vehicle is 146 minutes. It is recommended that the average processing time at Beit Bridge and Martins Drift be in line with the average processing time for other borders in Africa, and be reduced to between 2.5 hours – 3 hours per heavy vehicle.

Consequently there is a dire need to address the stated infrastructural, operational and institutional gaps identified at Beit Bridge and Martins Drift Border Posts. These gaps not only hinder trade facilitation but also their transformation to be one stop border posts.

The transformation of borders to be one stop border posts primarily requires the harmonization of border post operations. Ideally there should be one clearing document for both the countries. The following requirements could also be necessary for the harmonization process:

- They include the introduction Regional Bond systems such as the SADC TMS (Transit Management System);
- removal of tariff barriers;
- harmonisation of systems;
- interfacing of Customs computer systems (Asycuda, Asycuda++, Asycuda World & SARS system);
- improvement and rehabilitation of the RTRN (Regional Trunk Road Network) in Africa;
- the reduction of the number of police checkpoints;
- modernisation of weighbridges (from mechanical to electronic);
- the standardisation of overload limits in the region;
- the introduction of electronic corridor & border post/ port monitoring systems; and
- the stamping out of corruption and thereby reduce transportation costs.

All these mentioned aspects need to be addressed at Beit Bridge and Martins Drift Border Posts.

#### 4.4.2.4 Proposed Measures for Beit Bridge and Martins Drift Border Posts by South African Government

The South African government is currently involved in the following activities regarding border post optimisation:

- The National Department of Transport is proposing to develop a mechanism to regulate truck stops at borders for purposes of recommending minimum safety and security standards for truck stops. This would recommend the acceptable distance between the location of truck stops and border posts as part of decongesting border crossings; and
- Government is also involved in an on-going project to develop traffic flow optimisation plans through country's significant border posts.

Limpopo province should participate and contribute in these activities and play an active role as the success of these activities will be to great benefit of improving freight transport in the Province.

#### 4.4.2.5 Dangerous Goods (Hazardous Materials) Transport

##### 4.4.2.6 Overview

Dangerous goods are also known as hazardous materials (shortened as Hazmat) refer to commodities or substances which are capable of posing a risk to health, safety, property or the environment. The transportation of dangerous goods in South Africa is regulated by The National Road Traffic Act 93 which was implemented in the year 2000. This act provides for the Dangerous goods Act which stipulates that any person transporting hazardous goods and substances in quantities above the exempt quantity will have to be fully compliant with the Act. The transportation of dangerous goods in the country is also done in accordance with the South African Bureau of Standards, "Code of Practice". The following requirements should be adhered to when moving dangerous goods in the country:

- Dangerous Goods transportation vehicles need to be placarded so as to indicate the type of substances in transit;
- Drivers of vehicles above 3500 gvm require Professional Driving Permits with category D;
- Drivers must carry relevant required documentation regarding the transportation of hazmat commodities or substances including a Transport Emergency Card and a Dangerous Goods Declaration;
- Insurance must be in place to cover Civil Liability and Recovery and Rehabilitation costs;
- Suitable vehicles for the goods and/or substances being carried should utilised;
- Emergency responders should be informed about the dangerous goods /substances being transported in advance before trip is undertaken;
- Drivers must have suitable Dangerous Goods Training and must be in possession of the certificate which is renewable annually; and
- Multi-loads must be compatible in terms of the Dangerous Goods Legislation and special multi-load placards must be in place on the vehicle.

#### 4.4.2.7 HAZMAT Commodities moved within Limpopo

#### Methodology for Identifying Hazmat Commodities on the 2006 and 2012 Freight Data Banks

A list of commodity groups transported on the main freight routes was established from the 2012 and 2006 freight data banks. There are nine classes of dangerous goods identified by the legislation and associated code of practise. Fuel and Chemicals was the only commodity groups included in the freight data banks that fall into these categories.

The annual tonnage of these commodities was determined per freight route. Map 4-6 and Map 4-7 present the annual tonnage of hazmat commodities transported on the main freight routes in 2006 and 2011 respectively. These volumes are the average freight volumes in both directions and the bar charts indicate the percentage split between fuel and chemicals transported on the route.

From Map 4-6 it is evident that fuel was the main hazmat commodity transported on the main freight routes in 2006. Higher percentages of fuel transported were observed in all the freight routes while chemicals hauled were primarily observed on R555, R81, R526 and the northern part of the N1. The significant volumes of hazmat commodities were transported on the northern part of the N1 between Polokwane and Beit Bridge, about 0.4 million tons on average per annum. Other notable routes that moved considerable annual volumes of hazmat commodities in 2006 include N11, Northern part of R33 (between N1 and Lephalale), R81, R71, R510, and R555 are the main corridors that hauled.

Map 4-7 shows that the hazmat freight pattern has changed over the last five years in the province. The transportation of fuel on the main freight routes has increased drastically whereas the transportation of chemicals has declined. The transportation of fuel is predominant on the N1, N11, R33, R37, R71, R519, R518 and R40 while that of chemicals is prevalent on the R71, R526 and R33. Large annual volumes of hazmat commodities were transported on N11 (between Groblersbrug and N1) about 0.7 million tons, N1 (between Polokwane and Pretoria) about 0.43 million tons. The southern part of the N11, northern part of N1-Polokwane to Beit Bridge, R37, R521 and R526 transported the average hazmat commodities ranging from 0.16 to 0.40 million tons per annum.

## Conclusion

The 2006 and the 2011 data banks revealed that:

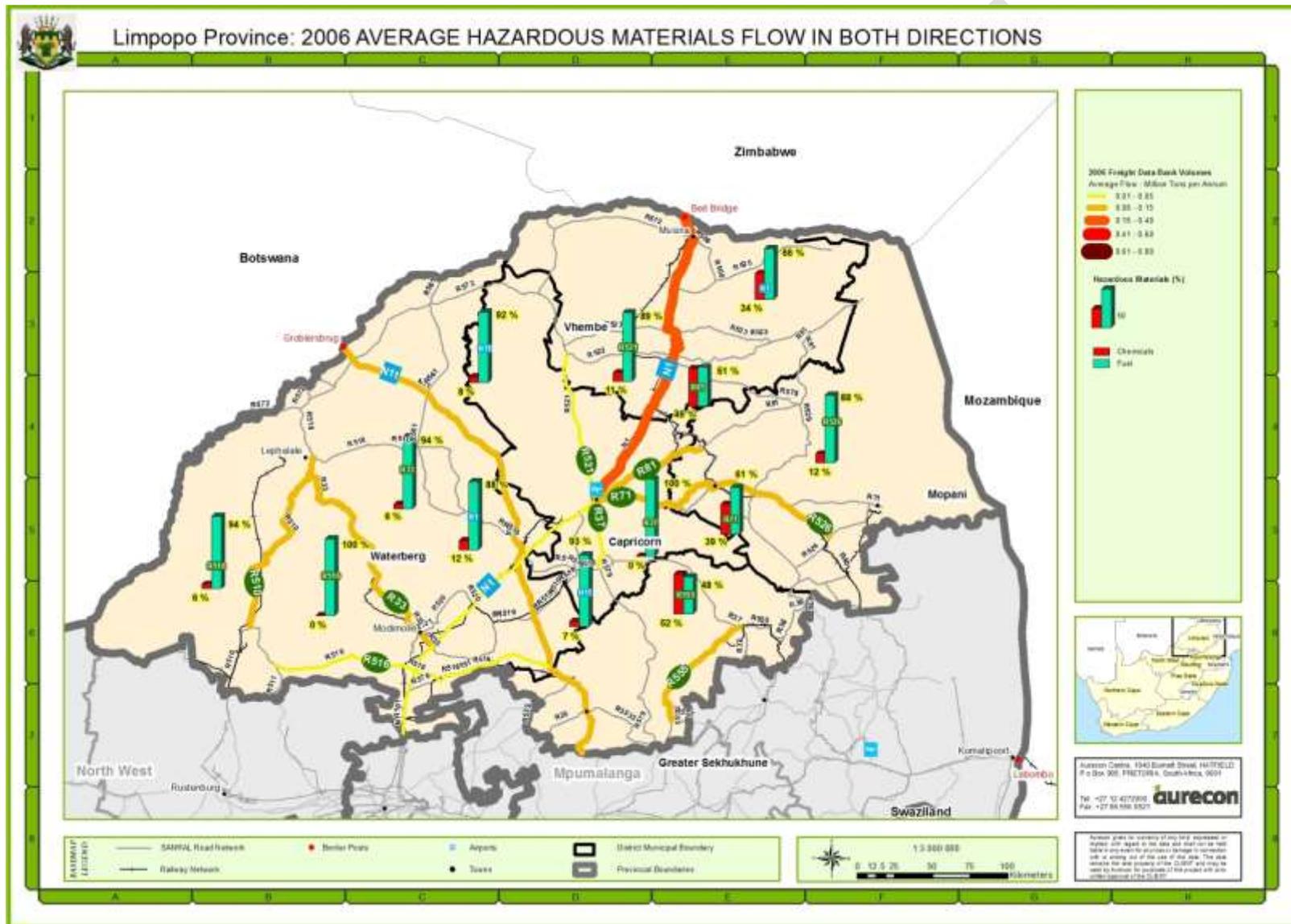
- Overall tonnage of hazmat commodities being transported in the province has increased significantly on the main routes except on the R33 which remained the same. This is most probably because of the deteriorating condition of the R33 and construction activities that commenced which forced truckers to make use of the alternative route of the N1 and then the N11 towards the Botswana border; and
- The transport of fuel increased dramatically versus chemicals. This can potentially be due to increasing fuel exports to neighbouring countries that are experiencing fuel shortages as well as provincial demand that increased due to vehicle ownership.

### 4.4.2.8 Challenges for transporting Hazmat in Limpopo Province

The key challenges identified with regard to the transportation of hazmat commodities in the province include:

- Lack of designated hazmat routes within the Province, specifically bypass routes around main economic areas like Polokwane, Makopane, Modimolle and Tzaneen. Alternative routes within cities and towns can also be determined to avoid sensitive areas should an accident cause spillage;
- Lack of hazmat specific incident management systems (IMS) put in place in other freight routes (except the N1) e.g. the N11;
- Uncertainty on the procedure to be followed by hauliers regarding the acquisition of licences for transporting hazmat commodities; and
- Lack of enforcement ensuring that hauliers have the correct documentation (permits/licences/certificates) for transporting hazmat commodities.

Map 4-6: 2006 Average Hazardous Materials Volumes





## 4.5 Legal and Policy Analysis

There are various regional, national and provincial legislative directives that have been developed to guide freight transport planning. This section of the report provides an overview of key policies and strategies which will inform the strategic focus of the freight transport implementation strategy.

### 4.5.1 Regional Freight Transport Perspective

South Africa, as part of the Southern African Development Community (SADC) is bound by treaties that exist between it and other member state of the SADC<sup>2</sup>. Limpopo Province is the gateway to three of the other member states of SADC, namely Botswana, Mozambique and Zimbabwe.

SADC was established in April of 1980, with the aim of providing a brief approach to regional integration. The member states developed the SADC Protocol on Transport, Communications and Meteorology in the Southern African Development Community Region. Table 4-8 outlines protocols that impact on freight transport planning:

Table 4-8: SADC Protocol on Transport

AREA OF COMMONALITY	AGREEMENT
Transport Integration	<p>Member States shall promote economically-viable integrated transport service provision in the Region -</p> <ul style="list-style-type: none"> <li>• characterised by high performance standards and consistent levels of efficiency and reliability of all individual component parts of the transport chain;</li> <li>• on the basis of complementarily and co-operation between modes, modal choice optimisation, seaport hinterland optimisation and with due regard to modal advantages;</li> <li>• bearing in mind the need to preserve the Region's transportation infrastructure;</li> <li>• by encouraging the development of multimodal service provision; and</li> <li>• Compatible with responsible environmental management; to support the development of major regional development corridors and facilitate travel between their territories.</li> </ul>
Integrated Transport Policy	<p>Member States agree to develop a harmonised integrated transport policy, which includes the -</p> <ul style="list-style-type: none"> <li>• establishment of infrastructure, logistical systems and institutional frameworks;</li> <li>• establishment of appropriate legal and financial frameworks; execution of research and technology transfer; and</li> <li>• development of effective communication networks; which support intra- and intermodal synergy and optimal utilization of modes.</li> </ul> <p>Member States shall apply the following principles –</p> <ul style="list-style-type: none"> <li>• the right of freedom of transit for persons and <i>goods</i>;</li> <li>• the right of land-locked Member States to unimpeded access to and from the sea;</li> <li>• the right of coastal Member States to unimpeded access to and from land-locked Member States;</li> <li>• equality of treatment of the nationals and passenger service providers of Member States with regard to the provision, access and use of infrastructure and immigration and clearance procedures;</li> <li>• the right of individual Member States to negotiate access and freedom of transit rights consistent with the principles of this Protocol, while recognising that individual needs of Member States may require specific bilateral arrangements; and</li> <li>• all modes of transport are allowed the necessary economic space to operate in a self-sustaining free market environment.</li> </ul> <p>Member States shall, in the exercise of their full sovereignty over their territory, have the</p>

<sup>2</sup> Member States include: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe.

AREA OF COMMONALITY	AGREEMENT
	right to take all measures necessary to ensure that the application of the principles contemplated in paragraph 2 shall in no way infringe their legitimate interests
Infrastructure	<p>Member States shall co-operate in providing, operating and maintaining transport infrastructure which supports the provision of integrated transport services, considering that infrastructure should progressively be self-sustaining with funding based on a user pay principle.</p> <p>Member States shall create and maintain regulatory frameworks, investment regimes and incentives which may facilitate the provision of such infrastructure by the private and/or public sector.</p> <p>Member States shall promote the effective management of existing and future infrastructure by both public and private sector and encourage -</p> <ul style="list-style-type: none"> <li>• joint ventures by multinational groupings to develop commercial facilities dedicated to the handling of regional trade;</li> <li>• the development of strategically located and commercially viable dry ports where appropriate;</li> <li>• the integration of infrastructure development along identified regional development corridors.</li> </ul>
Logistics Systems	<p>Member States shall co-operate in incrementally promoting the development of logistical systems by public and private sector bodies to support effective intermodal transport operations characterised by -</p> <ol style="list-style-type: none"> <li>a) intermodal synergy;</li> <li>b) intramodal co-operation, especially between established service providers and small, medium and micro enterprises; and</li> <li>c) optimal use of unutilised loading units such as freight containers and pallets to transport cargoes.</li> </ol> <p>The logistical systems shall aim to enhance the efficiency of specific regional development corridors in -</p> <ul style="list-style-type: none"> <li>• the trans-shipment of cargoes;</li> <li>• the processing of cargoes and persons at trans-shipment points, frontiers and destination points; and</li> <li>• the planning and operation of transport equipment and infrastructure.</li> </ul> <p>Member States shall in particular focus on -</p> <ul style="list-style-type: none"> <li>• the harmonisation of domestic legislation, including provisions dealing with statutory liability of service providers;</li> <li>• the development of simplified and harmonised documentation which supports the movement of cargoes along the length of the logistical chain, including the use of a harmonised nomenclature;</li> <li>• the implementation of state-of-the-art rapid communication, information and data processing and exchange facilities to support corridor operations and supplying real-time logistical and other information to corridor users;</li> <li>• the encouraging of containerisation, including the balancing of supply and demand;</li> <li>• the improvement of rail transit times;</li> <li>• the enhancement of performance of rail and freight container information tracking systems;</li> <li>• the limitation of dwell times in ports and dry ports;</li> <li>• the implementation of measures to enhance the security of cargoes; and</li> <li>• the development and implementation of quality controls including safety standards applicable to all modal transport operators.</li> </ul> <p>Member States shall encourage the adoption of simplified measures falling outside the sectors addressed in this Protocol which may also contribute towards the objectives of this Chapter. Such measures may include -</p> <ul style="list-style-type: none"> <li>• clearance and pre-clearance procedures at borders and dry ports for goods and</li> </ul>

AREA OF COMMONALITY	AGREEMENT
	<p>pre-clearance of freight containers;</p> <ul style="list-style-type: none"> <li>financial requirements for import, export and transit movement of goods and road vehicles; and</li> <li>clearance procedures for SADC nationals, including immigration and public health measures.</li> </ul> <p>Member States shall promote the necessary liaison between their various ministries and departments to execute the provisions of the above.</p>
Institutional Framework	<p>Member States shall establish institutional frameworks involving all transport modes to promote inter-and intra-modal co-operation between stakeholders and to support the development of regional development corridors facilitating unimpeded access and travel between the territories of the Member States.</p> <p>Member States shall establish criteria to identify regional development corridors which may include all modes or be modal specific.</p> <p>Member States shall promote the establishment of cross-border multimodal Corridor Planning Committees comprising of public and private sector stakeholders in the Member State or States whose territory or territories are traversed by such corridors.</p> <p>Member States shall support the functioning of Corridor Planning Committees by developing -</p> <ul style="list-style-type: none"> <li>performance criteria for major regional development corridors to facilitate planning and prioritisation;</li> <li>databases on infrastructure and operational matters to deliver recent, comparable and relevant information on transport and travel needs of the Region to support planning and development by all stakeholders; and</li> <li>Institutional models for such committees.</li> </ul> <p>Corridor Planning Committees shall include adequate representation by -</p> <ul style="list-style-type: none"> <li>all modal transport operators servicing the corridor including multimodal transport operators;</li> <li>transport and infrastructure authorities with responsibilities in respect of the provision and management of transport and related infrastructure facilities along the corridor;</li> <li>customs and excise authorities with responsibilities in respect of the corridor;</li> <li>freight forwarding and clearing agents servicing the corridor;</li> <li>trade and industry authorities and bodies;</li> <li>financial and insurance institutions, industrialists and developers;</li> <li>border post authorities;</li> <li>immigration authorities with responsibilities in respect of the corridor;</li> <li>users of corridor systems and facilities; and any other stakeholders.</li> </ul> <p>Corridor Planning Committees shall be structured and assume functions according to the specific requirements of a corridor.</p>

#### 4.5.2 Southern African Customs Union (SACU)

The Southern African Customs Union MOU provides for the establishment of various technical committees. The Transport Liaison Committee's role is to assist and advise the Commission in its work.

#### 4.5.2.1 Responsibilities of the Transport Liaison Committee

##### 4.5.2.1.1 The Terms of Reference for the Transport Liaison Committee comprises generic and specific aspects.

#### Generic Aspects

- Provide technical advice to the Commission on transport and other related matters;
- Monitor the implementation of the SACU Agreement and its Annexes in so far as they relate to transport and other related matters, with a view to advise Commission;
- Support and facilitate the establishment and operation of SACU institutions provided for in the SACU Agreement;
- Facilitate the development and propose amendments to Annexes relating to transport and other related matters;
- Appoint task teams, where necessary, to facilitate the work of the TLC;
- Carry out all duties and perform all functions assigned to it by the Commission; and
- Make proposals, from time to time, to Commission for any amendments to the Terms of Reference.

#### Specific Aspects

- Facilitate an integrated and seamless conveyance of goods and passengers with a view to reducing transportation costs and transit times;
- Facilitate easier access and promote simplification and harmonization of procedures for land-locked Member States to port facilities;
- Promote the application of equal treatment to the national transport providers of Member States with regard to the provision, access and use of infrastructure, customs and immigration clearance procedures;
- Promote effective utilization of all modes of transport to encourage complementarity and efficiency in the region;
- Facilitate cooperation and mutual assistance among the respective authorities involved in the conveyance of goods and passengers within SACU;
- Facilitate the simplification and harmonization of all policies, laws, regulations, procedures and administrative measures pertaining to the conveyance of goods and passengers within SACU;
- Facilitate the development of a programme of cooperation in transport and other related matters; and
- Promote the exchange of information pertaining to transport matters.

Article 6.6 deals with loads on vehicles and provides as follows:

1. Member States shall implement harmonised permissible axle mass loads and gross vehicle mass and gross combination mass limitations with due consideration of the need to balance financial needs and interests of preserving the Region's road infrastructure, optimising road transport operations and enhancing road traffic safety.
2. In order to attain the objectives stated in paragraph 1, Member States shall develop a sustainable strategy, which shall include -
  - a) an action programme for the incremental or phased in implementation of harmonised maximum axle mass loads by Member States which are not in a position to implement such loads immediately;
  - b) the procurement of adequate and sustainable funds for improvement, extension and maintenance of the Region's road infrastructure contemplated in Chapter 4; and
  - c) the development and implementation of a regional overloading control strategy which shall provide for, amongst others -

- (i) coordinated programming of overloading control activities;
  - (ii) co-operation with regard to the sharing of weighbridge facilities and equipment in the Region;
  - (iii) a coordinated approach in respect of the maintenance and calibration, practices and procedures and the management of information collected at weighbridges;
  - (iv) harmonised legislation which ensures the necessary legislative authority to prosecute offenders;
  - (v) harmonised penalties or administrative fees for vehicle overload offences which take account of factors such as pavement damage and travel distance;
  - (vi) effective enforcement procedures;
  - (vii) the introduction of special training programmes for traffic officers, prosecutors and transport operators and their employees;
  - (viii) common training standards and the provision of joint training to enforce the sharing of technical resources and expertise;
  - (ix) the possibility of involving the private sector as a form of self-regulation in order to promote voluntary compliance;
  - (x) the introduction of administrative control measures in respect of habitual offenders; and
  - (xi) the launching of public awareness campaigns.
3. Member States shall adopt a harmonised position with regard to the application of a bridge formula.
- Article 6.7 prescribes how abnormal, awkward and hazardous substance loads should be dealt with and provides as follows:
4. Member States shall develop and implement harmonised standards for the conveyance of abnormal, awkward and hazardous substance loads in respect of, amongst others -
- a) the classification of such loads; and
  - b) the requirements and conditions in respect of the conveyance of such loads including:
    - (xii) the issuing of authorisations;
    - (xiii) the nature and mass dimensions of the load;
    - (xiv) the designation of routes;
    - (xv) the need for escort vehicles;
    - (xvi) maximum speed limits; and
    - (xvii) harmonised authorisation, escort and other relevant fees
 in this regard.
5. Member States which have not yet acceded to the Basel Convention on the Transboundary Movements of Hazardous Substances and their Disposal, 1989, shall consider acceding to that Convention.

### 4.5.3 National Freight Transport Perspective

There are numerous policy documents outlining statements that are to guide transport planning in the republic. This section of the report provides an overview of 'what these policies say about freight transport planning'.

#### 4.5.3.1 The South African Constitution (1996)

The South African Constitution allocates the responsibility of exercising legislative and executive power to Provinces on the following:

- Road Traffic Safety and regulation; and
- Public Transport, both whose promotion is the responsibility of the Department of Transport.

#### 4.5.3.2 National Land Transport Strategic Framework

The National Land Transport Strategic Framework (NLTSF) exemplifies the national five-year land transport strategy (2006 – 2011) which acts as a guide for transport planning and land transport delivery initiatives by the National Government, nine Provinces and 284 new municipalities over the five year period. The NLTSF is based on the requirements of Section 21 (3) of the NLTTA, which states the following:

***“The National Land Transport Strategic Framework (NLTSF) must set out national policy with respect to land transport.”***

Additionally, issues that were considered to be important in the provision of a more holistic framework i.e. public transport, rural transport and safety, were included. Efficient freight movement is crucial for the development of a country as it increases the countries' global competitiveness and also minimises the cost of internal movements of goods. Therefore the implementation of a decisive freight transport strategy is imperative. In South Africa's context, the NLTSF was formulated in an attempt to align freight transport logistics with economic and industrial development strategies; and also allow for the development of ports and operations with freight flow demand patterns and sea freight trends.

Strategies for freight transport outlined in the NLTSF include the following:

- To promote a strong, diverse, efficient and competitive freight transport industry within the limits of sustainable transport infrastructure;
- To promote improved conditions of employment and participation within the freight industry; and
- To promote a shift of freight from road to rail.

Strategies for Inter-Provincial Land Transport outlined in the NLTSF include the preparation of a high level, long-distance inter-provincial land transport strategy which will assist the Provincial Licensing Boards (POLBs) in disposing of applications for inter-provincial services.

The strategies for Cross-Border Road Transport outlined in the NLTSF are of establishing a needs-basis to assist the CBRTA Regulator Committee in making decisions on the allocation of cross-border permits in the context of the SADC protocol; and to promote improved levels of service to passengers and freight at border posts.

Other Strategies outlined in the NLTSF are for Public Transport, Urban Land-Use Restructuring, Roads, Rural Transport Development, Traffic Safety and Enforcement and Tourism and Transport, amongst others.

#### 4.5.3.3 National Transport Policy (1996)

Land Freight Transport is one of the focus areas of the Green Paper on National Transport Policy. Land freight transport comprises both domestic and international conveyance of goods by road and rail. The main functional areas thereof include the management of operations; maximising modal capacity; equitable infrastructure cost recovery and administrative and institutional aspects. Detailed issues concerning the functional areas include land freight transport management and operations; modal capacity; equitable

distribution of infrastructure costs; administration and institutional aspects; cross-border operations; international relationships and road traffic and transport law enforcement on the road network.

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Some of the strategic objectives for Land Freight Transport outlined in the National Transport Policy are as follows:

- Development of a comprehensive land transport information system;
- Establishment of stakeholder consultative forums;
- Promotion of a strong, diverse, efficient and competitive transport industry in the limits of sustainable transport infrastructure; and
- Optimisation of road transport law enforcement.

#### 4.5.3.4 National Road Traffic Act (1996)

The Road Traffic Act, 1996 (Act No. 93 of 1996), and the Road Traffic Regulations made in terms of this Act establishes the maximum mass limits of vehicles used on public roads. The Act also determines the powers of traffic officers regarding the enforcement of the mass limits. These mass restrictions and powers are discussed in this section.

Some of the sections relevant to freight transportation in the National Road Traffic Act are outlined below.

- Section 71 of Chapter 12 of Presumptions and Legal Procedure of the National Road Traffic Act (NRTA) asserts that where it is suspected that an offence was committed with regards to the mass of a motor vehicle, the vehicle will be subjected to weight measurement by means of a mass-measuring bridge or other mass measuring instruments and results thereof will be accepted as correct should there be no evidence to prove the contrary;
- Documents issued by the manufacturer stating the gross vehicle mass of a particular motor vehicle shall act as proof of the actual mass of the vehicle;
- Chapter 13 of the NRTA stipulates that the Minister of Transport has the authority to make regulations, after consultations with MECs, that are not inconsistent with the Act. Other sub-sections of this Act pertain to the regulation of the size, height, width and length of a particular vehicle, diameter of wheels and the width; the emission of exhaust gas, smoke, fuel, oil, visible vapours, sparks etc. Specific regulations for vehicles carrying dangerous goods are also provided for in Section 75 (h) of Chapter 13. These regulations relate to “the classification of dangerous goods, the powers of traffic officers in respect of the transportation of dangerous goods; the manner and conditions on which specified dangerous goods may be transported; and the dangerous goods which may not be transported”.

The numbers of the relevant regulations are 234, 235, 236, 237, 238, 239, 240, 241, 242 and 243. In addition, section 69 to 73 and regulation 248 formulate a number of presumptions that are applicable to regulations 234 to 243. Specific regulations are discussed in the Table 4-9.

Table 4-9: Relevance of the Regulations in Overloading Control

REGULATION	OBJECTIVE	OVERLOADING CONTROL MEASURE
Regulation 238: The loading limit of tyres	Prescribes the mass restrictions that apply to the different vehicle tyre sizes and it also deals with tyre pressure.  <b>The aim of this regulation is to ensure safety.</b>	The permissible mass, given the type of tyre and/or the tyre pressure, can be read off a table.
Regulation 239: The carrying capacity of the vehicle	Prescribes restriction mass-load in accordance with the carrying capacity of the vehicle.  <b>The aim of this regulation is to ensure road safety.</b>	Regulation 239 refers to three different matters that are all concerned with the carrying capacity of the vehicle itself (engine, chassis and body)

REGULATION	OBJECTIVE	OVERLOADING CONTROL MEASURE
Regulation 240: The carrying capacity of the road	Prescribes the mass-load restriction on axles and axle units in accordance with the restricted carrying capacity of the road (i.e. pavement damage).  <b>The aim of this regulation is to protect roads.</b>	The threshold of vehicle or a combination of vehicles (with pneumatic tyres) on public roads is outlined for heavy vehicles
Regulation 241: The carrying capacity of bridges (bridge formula)	Determines the total mass-load of groups of axles excluding the axle units covered by regulation 240(b).  <b>The aim of this regulation is to protect bridges.</b>	The regulation must restrict the total mass load of vehicles to a level that corresponds with the carrying capacity of road bridges.
Regulation 242: Distribution of the mass-load on the vehicle	Determines the maximum permissible difference between the wheel mass-loads on the left and right-hand side of a vehicle and the ratio between the mass of the steering axle of a vehicle and the mass of the rest of the axles of such a vehicle or the so-called under-loading of the steering axle.  <b>The aim of this regulation is to ensure safety.</b>	Specification of a minimum mass on the steering axle as a percentage of the mass of all the axles of such a vehicle.
Regulation 243: Vehicles fitted with tyres other than pneumatic tyres	Determines the permissible axle mass-loads of vehicles that are not fitted with pneumatic tyres.  <b>The aim of this regulation is to ensure safety and to protect the road pavement.</b>	

Source: [www.nra.co.za](http://www.nra.co.za)

#### 4.5.3.5 Moving South Africa: Towards a Transport Strategy for South Africa for the year 2020 (1999)

Moving South Africa (MSA) was designed to produce a data-driven for strategic action that extends the short to medium-term policy formulation documented in the Transport White Paper into a long-term formulation which embodies the sets of trade-offs and choices necessary to realise the vision as set out in the White Paper. It acknowledges the role on transport within the sector as a critical input to other industries and that the goals of the sector should be to meet the national and social (non-transport) objectives of the nation.

Examples include:

- Economic growth, creating a high and rising standard of living for all citizens as set out in GEAR and the RDP,
- Increased trade, especially with neighbouring SADC countries,
- Improved access to employment opportunities, or
- Increased social integration.

Customer needs, national objectives and systems sustainability issues are the foundation of freight strategy choices. MSA project initiated a review through primary research of national and customer objectives. An evaluation of the transport system against set objectives and identified strategic challenges to be mitigated was conducted. These challenges were classified into two groups: Those outside the transport system requiring prior choices to be made by others outside the transport sector and those within the system requiring choice and action from the Department of Transport, provincial, local transport authorities, provider or stakeholders.

Outcomes of the research on customer needs revealed a certain level of dissatisfaction on some aspects of the system particularly that of rail freight prices and service; and prices at ports. Performance against international benchmarks, aside for export bulk freight, was poor. Strategic challenges with regard to freight transport were classified into two groups:

- Lack of support for export competitiveness; and
- Low levels of system sustainability.

The MSA outlines three strategic actions for the freight system:

- Build density in the transport system by focusing freight flows in select corridors by supporting and reinforcing current trends to build the backbone of the system, at the same time as reducing complexity and investment requirements;
- Build economies of scale within the different modes by focusing the role of the modes, maximising scale economies within each mode and offering differentiated services where economically sustainable; and
- Improve competitiveness by removing obstacles, improving integration, ensuring sufficient reinvestment to maintain quality infrastructure and operations, restoring price and value signals between customers and providers and building an industry platform which drives differentiation and innovation.

#### 4.5.3.6 National Spatial Development Perspective (1999)

The National Spatial Development Perspective (NSDP) acts as a mechanism for the coordination of policy in relation to the spatial inference of infrastructure programmes at the national, provincial and local level of government. It outlines principles and methods for guiding infrastructure investment development decisions; it interprets spatial realities and the repercussions for government's; and clarifies spatial appearance of the main social, economic and environmental tendencies which should ultimately share the understanding of the national economy.

The NSDP also identifies categories of economic potential which include the production of high value, differentiated goods; public services and administration; retail and private sector services; and tourism.

The NSDP acknowledges the importance of the role that rail and road infrastructure plays in the socio-economic development of the country as a whole and that investing in its development is crucial. Roads and rail play an important part as they offer support to the flow of goods and materials between manufacturers and consumers, nationally. Therefore a national freight network is essential for sustaining this interaction.

#### 4.5.3.7 White Paper on Spatial Planning and Land Use Management (2001)

The objective of this White Paper is to “facilitate the allocation of land to the uses that provide the greatest sustainable benefits and to promote the transition to a sustainable and integrated management of land resource system”.

The main goal for the White Paper is to create a legislative and policy framework that will allow the government to develop policies, plans and strategies for the use and development of land which will be aimed at addressing and resolving spatial, economic, social and environmental problems of the country. This White Paper serves as a guide to practical ways in which South Africa can adopt this approach. This will require the satisfaction of the following needs:

- The development of policies to ensure the best usage of land and the management thereof;
- The improvement of management, planning, monitoring and evaluation processes;
- The strengthening of institutions and coordinating mechanisms;

- The development of methods to ensure the satisfaction of the needs and objectives of communities and people at the local level;
- The basis of the system will be principles and norms aimed at achieving sustainability, equality, efficiency, fairness and good governance in spatial planning and land use management. The decisions of planning authorities, whether related to the formulation of plans such as IDPs or the consideration of land development applications such as rezonings, must all be consistent with these principles and norms. A failure by an authority to affect this enables the Minister to intervene in the decision, either to require that it is reconsidered or in extreme cases to take the decision him or herself.
- Land use regulators; and
- IDP-based local spatial planning.

Municipalities have the responsibility of compiling a spatial development framework for their area. The spatial development framework has four components:

- Policy for land use and development;
- Guidelines for land use management;
- Capital expenditure framework showing where the municipality intends spending its capital budget; and
- Strategic environmental assessment.

#### 4.5.3.8 National Freight Monitoring Framework (2002)

The National Freight Monitoring Framework is aimed at addressing challenges that are faced in capturing; processing and presenting freight information for the support of decision making of the Department and its stakeholders. This framework will enable the Department and its stakeholders' access to reliable information on goods and services in the country. The NFMF will also address the challenges faced in the capturing, processing and presentation of freight information.

Currently, the following short-comings have been identified:

- All data available to document the landscape has been taken from sources that are static, and vary in terms of age from one to four years old
- The data is inconsistent in terms of freight classification and various measurements
- There are no indications of freight origin and destination
- Freight classification indicates no particular freight type classification
- Most of the data is related to provincial views and not to corridors;
- Overall data quality is poor;
- There are gaps in understanding the corridor performance including bottlenecks such as inter-modal depot waiting time and bottlenecks due to traffic congestion;
- No data in support of the above congestion and the challenge of re-routing and capacity planning is available;
- Most of the information available is not shared between organisations;
- No consolidation across modes and between nodes is currently taking place;
- No maintenance and co-ordination of any standards for the exchange of data from one mode to another exists;
- No information in support of deficiencies in infrastructure for the accurate forecasting of the state of infrastructure and demand exists;
- There is insufficient data for accurately monitoring what, why, when and where effectiveness is compromised; and
- No "just-in-time" logistics data is available to establish where freight is and how to prioritise port space management.

Other benefits of the NFMF include the ability to monitor freight overloading, licensing enforcement, identification of bottlenecks in freight traffic transport allowing for the mitigation of these issues, integration of information captured with other existing systems to enable reliable decision-making, ensure compliance with the Container Safety Initiative (CSI) and the International Ships and Port Security (ISPS) code for the profiling of cargo operators.

The NFMF will include all transport modes, i.e. road, rail, aviation, maritime and pipeline. Three critical components for achieving the envisaged end goal of the framework are Freight Information Flows, Intelligence and Decision Support.

Freight Corridors identified in the NFMF are:

- Gauteng – Durban Corridor (transportation of goods mainly in containers);
- Gauteng – Cape Town Corridor (cargo transported by road, rail and air);
- *Gauteng – Beitbridge Corridor (cargo transported by road, rail and air);*
- Gauteng – Port Elizabeth Corridor;
- Gauteng - Maputo Corridor;
- Gauteng – Lobatse – Walvis Bay Corridor; and
- Gauteng – East London Corridor.

Suppliers of information are identified as follows:

- Road Traffic Management Corporation (RTMC);
- South African Road Agencies Limited (SANRAL);
- South African Revenue Services (SARS);
- Cross Border Road Transport Agency (CBRTA);
- Department of Public Enterprises (DPE);
- Department of Trade and Industry (DTI);
- Department of Minerals and Energy (DME);
- Airports Company of South Africa (ACSA);
- Provincial Department of Roads and Transport; and
- Private Sector (Freight Logistics Industry).

Guiding principles for the development of a monitoring framework are as follows:

- Data to be collected must be cost effective and also be cost effective to report on;
- Reported indicators must be measurable and cover key areas effectively and not only focus on logistics;
- Suitable user-friendly applications must be used (i.e. GIS and MS Excel) and should be available across the whole value chain; and
- Learning from existing Databanks and other DOT reporting systems.

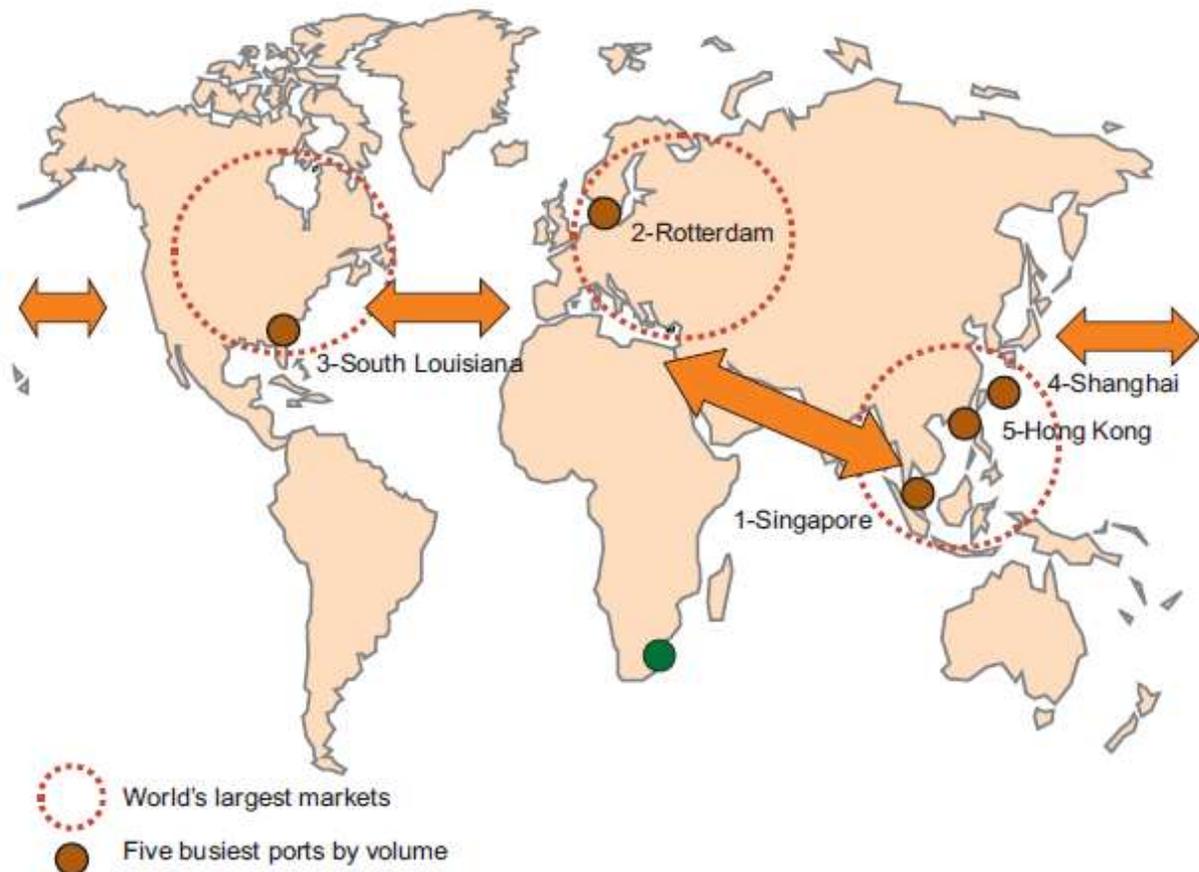
#### 4.5.3.9 National Freight Logistics Strategy (2005)

The National Freight Logistics Strategy (NFLS) is the DoT's response to the freight system's inability to fulfil the demand for cargo movement process, levels of service, quality of service at acceptable levels of reliability in a manner that supports national development strategies. This failure stems from an inappropriate institutional and regulatory structure that does not punish inefficiently and reward efficiently. It is structurally incapable of appropriately allocating external costs and raising efficiency. Although the elements of the system, such as the national road network, are of high standard and even surpass those of other developed economies, it is the system-level performance and state of infrastructure that need attention. Improvement can only be achieved by an integrated system-level approach. This strategy signals a shift toward demand-driven delivery of freight logistics services, rather than a supply approach.

The strategy seeks to address a number of issues that undermine the competitive advantage that South Africa enjoys and renders it less competitive and relevant in world markets. South Africa's geographic position, relative to global routes, is a disadvantage itself. It is therefore important that the transport system support South African products/ goods and services in order for them to be and remain competitive in global markets that are not skewed in their favour already because of our geographic location.

Figure 4-3 illustrates the well-developed global routes around highly efficient port systems with huge base markets that South Africa's products must compete with.

Figure 4-3: Global Product Routes and Ports



Source: NLFS

The inefficiency of inland transport in serving an increasing hinterland is detrimental to the socio-economic development of South Africa. The majority of freight movement is internal, contrary to the perceived importance of corridor movements that maintain exports and imports throughout the country's ports. It is therefore important for the system to be able to bring marginalised and/or rural producers of goods and services into the primary freight transport system and also respond to the increasing freight on the transport network.

The main challenges facing South African export and imports as identified by the NFLS, are inefficiencies that constrain the entire transport system and these are:

- Low levels of investment in certain infrastructural and operational equipment
- Rigid management practices formed by supply-driven strategies
- Rigid costing approaches that are not customised.

Funding and financing transport infrastructure, network development and maintenance is not constant and responsive to transport demand and infrastructure utilisation over the long term.

The vision of the NFLS is to respond to problems in institutional and regulatory frameworks, infrastructure, ownership management, operations, skills, financing structures and methodologies for the freight system. This requires the government to take a more interventionist approach to regulating the freight system and to ensure that the incidental

costs of externalities and inefficiencies are not merely passed on to cargo owners, but are correctly allocated.

The institutional objectives of the NFLS are as follows:

- To promote private-public partnerships;
- To create and maintain a programme aimed at addressing operational weaknesses and existing restrictions;
- To develop integrated planning across all spheres of government incorporating the views of all stakeholders; and
- To develop freight logistics planning for operations and infrastructure across the various corridors enabling the integration of South Africa, the region and continent as a whole.

The strategic objectives of the NLFS are as follows:

- To secure the sustainability of the sector thereby ensuring the adaptability of the sector to changes within the industry and the government;
- To respond to challenges facing the freight sector;
- To develop, plan, implement, monitor and update strategies and programmes that enable further enhancement of infrastructure, systems and operations along freight corridors and sub-corridors including airports, border posts, intermodal facilities, pipelines, port facilities, rail network and roads;
- To improve the capacity of the system; and
- To develop provincial freight scenarios for 2010.

The operational objectives of the NLFS are:

- To reduce the transport and logistics related cost of doing business; and
- To reduce transit time.

Policies informing the NLFS framework are as follows:

- **Policies of the National Transport Policy**
  - White Paper on National Transport Policy
  - White Paper on National Commercial Ports Policy
  - White Paper on National Policy on Airports and Airspace Management
  - Moving South Africa: The Action Agenda; and
  - National Land Transport Strategic Framework
- **Policies of the Department of Public Enterprises**
  - An Accelerated Agenda Towards the Restructuring of State Owned Enterprises
- **Policies of the Department of Trade and Industry**
  - Accelerating Growth and Development: the Contribution of an Integrated Manufacturing Strategy (IMS)
  - Integrated Industrial Strategy
  - Microeconomic Reform Strategy
  - Motor Industry Development Plan and
  - BEE Strategy
- **Policies of the National Department of Agriculture**
  - A Strategic Plan for South Africa Agriculture;
- **BEE Commission Report.**

#### 4.5.3.10 Road Infrastructure Strategic Framework for South Africa (2005)

The Road Infrastructure Strategic Framework for South Africa document is a resultant of consultative processes initiated after the 2001 National Department of Transport discussion document An approach to a long-term national roads plan for South Africa to meet the

economic, social and development needs of South Africa. The rationale behind the study was to supply a plan of action for tackling the most critical challenges impeding on road infrastructure in relation to the catalytic role it plays in development and in providing accessibility and mobility in the country. It addresses the following concerns related to the following:

- The optimisation of efficiency and effectiveness through the improvement of institutional arrangements;
- The consideration of functionality and ownership should network classification be conducted;
- Methods of implementing information systems to enable optimal decision-making processes;
- Sustainable funding mechanisms that ensure the sustainability of the system and the funding of access roads in the poorest rural and urban areas; and
- The development of the human capital of the roads sector and the extension of capacity to satisfy demands and the role the sector should play in the alleviation of poverty and unemployment.

The priority areas of the strategic framework include the following:

- Revising funding arrangements for roads, including reviewing toll road policies, strategies and recommendations for charging appropriate levies for freight transport haulers;
- Reviewing the restructuring of institutional arrangements for road planning and delivery at the provincial and municipal level; and
- Reviewing and re-declaring separate elements of the total road network based on revised classification approach to show the country's overall roads needs efficiently.

The road infrastructure strategic framework acknowledges the “road/rail” debate on freight haulage which is based on the notion that the market share of rail freight transport is declining due to inefficiencies in the rail system resulting in road being the preferred mode for transporting freight. To this end, the framework asserts that there is a need to develop strategies that will bring about sustainable investment in rail infrastructure and rolling stock, to ensure that cargo which was previously transported by rail reverts back to the rail mode which will lessen the fiscal burden for road network management. The framework also takes cognisance of the important role that roads play in the promotion of economic growth and social development in the country's policy and its role in encouraging growth in other economic sectors. Additionally, it recognises the importance of linking and harmonising with the SADC road network.

#### 4.5.3.11 National Land Transport Act (2009)

Chapter 4 of the NLTA outlines general principles for transport planning and its integrations with land-use and development planning. Also, it provides integrated transport plans which are formulated to give structure to the planning activities that are undertaken by municipalities as mentioned in the Part B of Schedule 4 to the Constitution. These integrated transport plans should form part of the transport section of the integrated development plans of municipalities.

Provisions for freight transport are outlined in Section 37 of Chapter 4 (Transport Planning) of the National Land Transport Act (NLTA). According to these provisions, it is the responsibility of planning authorities to develop a freight transport policy at both national and provincial levels which covers the transportation of goods by road, rail, pipelines, from ports and airports. This strategy must identify the various routes for the movement of goods to promote flawless movement and avoid conflict with road traffic. Additionally, the strategy must include a plan for the movement of dangerous goods.

## 4.5.4 Provincial Freight Transport Perspective

This section presents what provincial policies and Integrated Development Plans entail about freight transport, challenges hindering its development as well as its future in the Limpopo Province.

### 4.5.4.1 White Paper on the Limpopo Provincial Transport Policy (2000)

The White Paper on Limpopo Provincial Transport Policy was never promulgated as an official policy document by the Limpopo Province. Its review is therefore not included in this write up.

### 4.5.4.2 Limpopo Province Freight Transport Strategy (2002)

The Limpopo Freight Strategy (2002) was developed against the background of the changes in the national political and economic environment, and also changes in the transport sector and global transport trends that affected transport infrastructure and operations in South Africa.

The strategy therefore adhered to national policy objectives with regard to freight transport. These objectives include amongst other excellent service for customers to enhance their global competitiveness, and to support job creation.

The following routes are presented by the Limpopo Freight Strategy (2002) as the main freight routes currently utilised by freight operators in the Limpopo Province:

- N1 main freight corridor in the Province, runs in a North-South direction towards Beitbridge Border Post at the RSA-Zimbabwe border;
- R35 between Martin's Drift Border Post (RSA-Botswana border) and Potgietersrus;
- R518 between Stockpoort Border Post (RSA-Botswana Border) and Potgietersrus;
- R517 between Stockpoort Border Post and Nylstroom;
- R510 between Stockpoort Border Post and Thabazimbi;
- R511 between Thabazimbi and Warm Baths;
- R36 and R40 from Louis Trichardt into Mpumalanga, towards the N4 in an Eastern Direction to Komatipoort Border Post (RSA-Mozambique border);
- R37 between Pietersburg and Nelspruit;
- R518 between Pietersburg and Nelspruit; and
- R518 and R37 between Potgietersrus and Nelspruit.

The Limpopo Freight Strategy also highlights the importance of an applicable legislative framework to the development of freight transport in the Province. These include:

- **White Paper Policy**  
Aimed to provide effective and efficient coordinated seamless freight transport services within the broad national policy framework that will contribute to the economic development of the Limpopo Province with the minimum externalities and side effects to the community and environment
- **Mandate of the Province**  
The mandate of the Province emanates from the Constitution of South Africa, 1996 (Act No. 108 of 1996). Its functions aligned to freight transport include:
  - Industrial promotion;
  - Road traffic regulation; and
  - Trade.
- **Cross Border Road Transport Act (1998)**  
It seeks to provide for co-operative and co-ordinated provision of advice, regulation, facilitation and law enforcement in respect of cross-border road transport by public and private sectors. Furthermore provides for the establishment of the Cross-Border Road Transport Agency.

- **Road Transportation Agreements with other Governments**

The Road Transport Agreements seek to ensure the provision of the following:

- Authorisation through issuing of permits of goods transport;
- Joint Committees;
- Vehicle and driver requirements;
- Harmonisation of Standards;
- Application of Legislation;
- Law Enforcement; and
- Information Management.

Legislation consulted at National Level included:

- Transport Deregulation Act, 1988 (Act No. 80 of 1988);
- National Land Transport Act 2009 (Act No. 5 of 2009);
- Cross-Border Road Transport Act, 1998 (Act No. 4 of 1998);
- Transport Appeal Tribunal Act, 1998 (Act No. 39 of 1998);
- South African Road Board Act, 1988 (Act No. 74 of 1988);
- Road Transportation Act, 1977 (Act No. 74 of 1977);
- National Land Transport Transition Act, 2000 (Act No. 22 of 2000);
- International Health Regulations Act, 1974 (Act No. 28 of 1974);
- Customs and Excise Act, 1964 (Act No. 91 of 1964);
- Counterfeit Goods Act, 1997 (Act No. 27 of 1997);
- National Road Traffic Act, 1996 (Act No. 93 of 1996);
- Administrative Adjudication of Road Traffic Offences Act, 1998 (Act No. 46 of 1998);
- Road Traffic Management Corporation Act, 1999 (Act No. 20 of 1999); and
- National Environmental Management Act, 1998 (Act NO. 107 of 1998).

Legislation consulted at Provincial level which was then reviewed included:

- The Northern (Limpopo) Province Road Traffic Act, 1997 (Act No. 5 of 1997);
- The Northern (Limpopo) Province Road Safety Act, 1997 (Act NO. 6 of 1997);
- The Northern (Limpopo) Province Roads Agency Limited and Provincial Roads Act, 1998 (Act No. 7 of 1998).

The Limpopo Freight Strategy (2002) states challenges regarding the development of freight transport in Limpopo Province. Overloading control was cited as the main challenge which gives rise to infrastructure and operational issues. Other issues include:

### Infrastructure Issues

- Poor road conditions, which implies that overloading control is not being exercised;
- At some traffic control centres there are inadequate facilities to deal with overloading.

### Operational Issues

- Bribery at weighing bridges occurs frequently, especially at Mantsole Traffic Control Centre;
- Personnel are not adequately trained in computer systems and issuing of documents, and therefore inefficient;
- Inconsistent and corrupt policing exists which leads to unfair competition;
- Weighbridge not calibrated correctly leading to incorrect weight distribution.

Limpopo Freight Strategy (2002) also stated other challenges impacting on the development of the freight industry in the Province. They include border post operations, safety and road conditions.

## Border Post Operation Challenges

- Lack of standard documentation for SADC countries for Customs and Excise currency control;
- Long delays due to inefficient border post operations and insufficient personnel capacity to deal with traffic volumes; and
- Computer system problems.

## Safety requirements and general challenges

- Hijackings of freight vehicles while transporting commodities;
- Too low speed limits which cause fatigue resulting in road traffic accidents;
- Inadequate parking facilities in towns; and
- Insufficient HIV/AIDS awareness campaigns.

## Road condition challenges

- Insufficient road maintenance;
- Insufficient weighbridge facilities and overloading control.

The interventions proposed to overcome these challenges and promote freight transport in Limpopo, as stated by the Limpopo Freight Strategy (2002) are as follows:

- Provision of more weigh bridges on more routes;
- Utilisation of random mobile weigh bridges;
- Strengthening enforcement on international overloaded trucks entering the country;
- Weigh bridges are not calibrated correctly which leads to incorrect weight distribution;
- Provision of safe rest and parking areas;
- Provision of HIV/AIDS awareness campaigns to freight operators.

### 4.5.4.3 Limpopo in Motion (2005)

According to the Limpopo in Motion of 2005, the mission statement for freight transport is to ensure that all goods movement by all modes, within and across provincial boundaries, is cost effective and controlled within a healthy competitive environment; and that all produce reaches the markets in time and in good quality and safely (Limpopo in Motion, 2005).

The Limpopo Motion further specifies the main objectives regarding freight transport in the Province as

- Co-ordination of freight transport;
- Regulation and law enforcement;
- Capacity building;
- Freight transport infrastructure;
- Road freight effectiveness;
- Externalities;
- Economic development.

Challenges and issues regarding the development of freight transport in Limpopo Province as presented in the Limpopo in Motion include (1) the National and Provincial roads are utilised for freight movements linking South Africa with neighbouring countries; (2) the road infrastructure in the Province is generally poor except for the N1 worsening the situation is the lack of sufficient funding to fund underdeveloped provincial roads; (3) the main factor attributing to the poor condition of road infrastructure in the Province is the excessive overloading of heavy vehicles.

Therefore the Province identified the following needs:

- To strengthen the traffic control capacities and enforcement at weighbridge stations;
- To develop strategic objectives and strategies in order to overcome the challenges hindering the improvement of freight transport in Limpopo and
- To develop suitable institutional arrangements

The Limpopo in Motion states that freight transport will develop in the Province if the following interventions are taken into consideration:

- Development and implementation of a master plan for freight transport facilities on major routes;
- Identification of infrastructure requirements for road freight operations;
- Determination of the development and implementation of effective cross border institutional coordination;
- Development of road freight infrastructure requirements;
- Improvement of general safety and trucking activities;
- Development and maintenance of freight transport routes (road and rail infrastructure) including the routes that would be appropriate for the movement of hazardous material;
- Implement load control strategies to protect the key freight transport network in the Limpopo Province; and
- Intensify overloading control and weighbridge operations.

#### 4.5.4.4 Limpopo Growth and Development Strategy 2004 - 2014 (2007)

The mission of the Limpopo Growth and Development Strategy is to stimulate, promote and sustain unity and an enabling environment conducive for economic development, social justice and improved quality of life for its people.

There are seven industrial clusters which promote economic development in the Province namely:

- Platinum mining cluster,
- Coal mining and Petrochemical cluster,
- Fruit and vegetable clusters,
- Logistic cluster,
- Red and white meat cluster and
- Forestry cluster.

These clusters are envisaged to promote freight transport in the Province in the sense that the goods produced will have to be transported to other Provinces and countries. The Limpopo Growth and Development Strategy presents each cluster as follows:

- **Platinum mining cluster** on the Dilokong Corridor between Polokwane and Burgersfort (Sekhukhune District): Anchor projects on this cluster include the new platinum mines and smelter as well as the chrome mines and all ensuing up-stream developments (input suppliers) that emerge from these developments. Down-stream activities refer to the smelter that has already been constructed with the potential for expansion, as well as a refinery that is envisaged in the future and other high value uses like in the autocatalytic, glass, dentistry, fuel cells industries, etc.
- **Coal mining and Petrochemical cluster** at Lephalale on the East-West Corridor (Waterberg District): Anchor projects comprise of the expansion of the existing Grootgeluk Coal Mine and the power station and also to build an aromatics extraction factory, which form the core of this cluster. The factory will be fed with chemical grade coal from Grootgeluk Mine. A wide range of down-stream opportunities exists in the styrofoam, plastic, nylon, rubber product, non-recovery coking and char industries.
- **Fruit and vegetable (horticulture) cluster** in Vhembe, Mopani and Bohlabela Districts: Anchor projects consist of the development of a fruit and vegetable processing facility. The cluster value-

chain should be extended up-stream to include the local production of inputs for the growing of selected fruit and vegetable commodities, such as plant material production, nurseries, pesticides and fertilisers (including organic fertilizers). The value-chain down-stream includes processing, packaging and exporting industries.

- **Logistic cluster** in Polokwane under Capricorn District: This proposed cluster should promote Polokwane as a destination of choice for people and cargo whereby the city can act as gateway to Southern Africa. The logistics cluster should therefore be centred on providing inter-modal transportation that incorporates Polokwane International Airport, the rail station and the proposed truck inn. Additional demand for air traffic will have to be induced, for example, by tendering to become a United Nations Logistics Depot for Sub-Saharan Africa. This will create opportunities up-stream for food production and down-stream for manufactured products, such as tarpaulins, water cans, basic medical supplies and packaging material. Manufacturing activities in the industrial parks adjacent to the airport should therefore become part of this cluster concept.
- **Red and white meat cluster** on all the corridors (all districts): This cluster should build on current and emergent cattle and poultry production, as well as animal-feed production, and should be expanded to incorporate under-utilised facilities such as state farms across the Province. Up-stream development opportunities include sorghum production by emergent farmers (a major substitute for maize), as a strategy to raise the competitiveness of animal-feed and meat production in Limpopo. Down-stream activities should include improved efficiencies at abattoirs, as well as the packaging and distribution supply chain.
- **Forestry cluster** in the Mopani and Vhembe Districts: Existing plantations are at the centre of this cluster. Up-stream activities include nurseries and plant material production, whereas down-stream activities refer to sawmills and other timber processing facilities.

The Limpopo Growth and Development Strategy presents interventions required to promote the freight industry in Limpopo based on the development clusters as follows:

- The upgrading of the road between Burgersfort and Polokwane, water source development education and skills development with specific reference to the mining sector;
- The approval for the expansion of the power station at Grootgeluk Coal Mine, water source development, education and skills development with specific reference to the chemical industry, and a rail link to Richards Bay in the long term;
- Improvements to logistical capacity and investment in plant biotechnology commercialisation of state farms, water resource development, rehabilitation of community irrigation schemes, skills development among emerging farmers and the encouragement of public-private partnerships with established commercial farmers;
- Negotiations with the United Nations regarding the utilisation of the airport as a logistics depot for Southern Africa; and
- Manage the impact of plantation forestry on already stressed watercourses.

#### 4.5.4.5 Limpopo Provincial Land Transport Framework (2007)

The mission statement as stated in the White Paper on the Limpopo Provincial Transport Policy (2000) “to provide a framework within which road traffic in the Province can move in a safe and controlled environment, whereby human life can be protected, traffic flow be optimised, road user cost be minimised, road infrastructure be safeguarded against misuse and it be utilised in the most efficient manner”.

Challenges associated with freight transport in Limpopo Province include:

- Increased accident risks;
- Noise pollution;
- Environmental Intrusion;
- Deterioration of road infrastructure due to over loading; and
- Weighbridge evasion and deviation to minor roads.

The Limpopo Provincial Land Transport Framework (2007) presents interventions that are required for the promotion of freight industry in the Province. They include:

- There is a need for effective control of overloaded heavy vehicles in order to minimise the damage caused to road pavements by high axle loads
- Alternative routes through towns by heavy vehicles must be identified, appropriately signed, maintained and enforced. Furthermore truck stops, climbing lanes, convenient shops, and accommodation (truck inns) should be considered on heavy vehicle routes and at border posts and towns.
- Building density in the transport system through focusing freight flows in select corridors and effectively using the different modes within the transport system
- South African National Roads Agency Limited and the Department of Roads and Transport have developed an Overload Control Strategy for Limpopo Province

#### 4.5.4.6 Limpopo Spatial Development Framework (2007)

The main objective with the provincial Spatial Development Framework (SDF) was to formulate a spatial framework which would guide and encourage equitable distribution of investment in terms of a functional settlement hierarchy, to achieve spatially balanced development across the Limpopo Province and support investment in sustainable settlements (Limpopo SDF, 2007).

The Limpopo SDF further states the criteria used for identifying settlement clusters associated with freight transport in the Province

- Existing and potential future economic activities such as businesses, mining and/or tourism potential and activities in or in close proximity of these development clusters have also played an important role in the identification of clusters with growth points and population concentrations within these settlement clusters;
- The existing and proposed industrial clusters and development corridors;
- The way in which the development of the settlement is influenced by factors such as agricultural potential, environmental sensitivity and mineral and mining occurrences.

#### 4.5.4.7 Limpopo Employment, Growth and Development Plan (2009)

The main objective of the provincial Employment, Growth and Development Plan (LEGDP) is to provide a framework for provincial government, local municipalities and the private sector to work together in tackling economic challenges. Some of the challenges that hinder economic development from a transportation point of view include:

- Lack of good roads;
- Under-utilisation of airport infrastructure;
- Unsustainable market share between goods transported by roads and rail;
- Lack of extensive rail infrastructure; and
- Poor maintenance of rail and road infrastructure.
- Some of the identified policy responses include:
  - Fostering good relations with private sector to mobilise investment for developmental projects;
  - Formation of a clearing house to scrutinise major strategic projects;
  - Improvement of asset register;
  - Fostering partnerships with educational institutions to enhance technical skills.

#### 4.5.4.8 Districts Integrated Development Plans

The following statements regarding freight transportation were extracted from the current district's Integrated Development Plans:

## Capricorn District-Integrated Development Plan (IDP) 2008/9-2010/11

The Capricorn District (IDP) states that Polokwane which falls under the district is known as the logistic hub of the Province, placing Capricorn District as the economic champion of the Limpopo Province. There are four development corridors of the Province that converge in the District namely:

- The Trans-Limpopo Corridor – follows the N1 from Gauteng to the rest of Africa via Zimbabwe;
- The Phalaborwa Corridor – stretches from the N1, north of Polokwane, eastwards through agricultural area around Tzaneen towards Phalaborwa. It then turns south to link with Maputo;
- East-West Corridor – leads to Botswana. It covers the mining and ecotourism areas in the west-central region of the Province; and
- Dilokong Corridor – covers the platinum mining area in the east-central region of the Province.

According to the Capricorn IDP, these corridors are used to transport fuel, food and spare parts by road.

## Greater Sekhukhune District – Integrated Development Plan (IDP) 2006/7 to 2008/11

There is a railway line that runs in two local municipalities (Greater Marble Hall and Greater Tubatse) which are used for transporting freight commodities from mining and agriculture economic sectors. This line links with the main railway line running between Pretoria and Polokwane (Sekhukhune District IDP).

Development of agriculture, mining and manufacturing economic sectors would give rise to the promotion of freight transport planning in the district. The following objectives regarding the development of the economic sectors should be taken into consideration:

- To facilitate the development and expansion of the Agricultural sector, this could be achieved by the development of an Agricultural sector strategy;
- To diversify the local economy by increasing economic activities that supports the mining sector. This could be achieved by the development of mining oriented activities;
- To stimulate value adding activities relating to primary sectors i.e. mining and agriculture, this could be achieved through the promotion of primary sector local value activities.

The Greater Sekhukhune ITP calls for the development of an agricultural sector strategy, expansion of mining oriented activities and the promotion of primary sector local value activities in order to promote freight transport in the district.

## Mopani District Integrated Development Plan (IDP) 2006-2011

According to the Mopani District IDP, rail is mostly used as goods carriers in the district. This is mainly found in the Greater Tzaneen, Greater Letaba, and Ba-Phalaborwa areas. There is a rail link from Groenhout to Mooketsi running to Modjadjiskloof. Tzaneen, Letsitele, Gravelotte through to Maputo.

Challenges faced by Mopani District regarding the promotion of freight transport include:

- Lack of road signs;
- Non-maintained roads and lack of route names and numbers
- The fence along main routes has been removed, this has resulted in stray animals on the road causing road accidents

Mopani District Municipality is situated within a number of strategic corridors in the Province which have a potential to offer opportunities of freight development (Mopani District IDP). The main corridors include:

**Ba-Phalaborwa Spatial Development Initiative (SDI):** This corridor is particularly well endowed with mining deposits with a number of mining operations already underway.

**Tzaneen – Letaba Agricultural Hub:** This is where most of the citrus fruits, sub-tropical fruit and vegetables in the districts are produced. This offers opportunities for processing of secondary products from fruit produce.

**Giyani Sub-region:** This region is potentially rich in good agricultural soils and mining deposits.

According to the Mopani IDP, Mopani is situated within a number of strategic corridors in the Province which have a potential to offer opportunities for freight development namely B-Phalaborwa Development Initiative (SDI), Tzaneen-Letaba Agricultural Hub and Giyani Sub-region.

### Vhembe District – Integrated Development Plan (IDP) 2008/9

Agriculture, mining and manufacturing are vital economic sectors for promoting freight transport in the Province. Mining within Musina LM appears to be declining with many mines shut down however there is a potential for coal mining should the road infrastructure be improved (Vhembe IDP)

The N1 passes through Musina and is mainly utilised to transport fuel, goods and services, and spare parts to our neighbouring country Zimbabwe. There is a need for improvement at the border for efficiency purposes.

Challenges with regard to agriculture in the district

- Lack of formalised, organised, reliable transit for perishable goods
- High cost of transport for bulky items
- Lack of production facilities
- Lack of infrastructure for small scale farmers
- Lack of market access particularly for livestock farmers

Vhembe district has potential opportunities with regard to agricultural production. This include fruit and vegetable processing, dairy production, establishment of abattoirs, meat processing, animal feed production, expansion of saw mill, furniture making, medicinal plants etc.

The Vhembe IDP provided interventions required for developing freight transport in the district. They include:

- Identification and prioritisation of roads that need upgrading through a consultative process
- Improvement of freight facilities at the border posts
- Agriculture and forestry value chain development and integration
- Mining sector value chain development and integration as well as diversification of the economic sector

### Waterberg District-Integrated Development Plan (IDP) 2008-2009

Provision of transport infrastructure is vital for the development of the freight transport in Limpopo Province. According the Waterberg District IDP: 2008-2009, there are certain busy roads in the district that are essential to the improvement of logistics for the expanded mining. They include (1) Gakgabudi through Mapela to Marken road – central to expanded platinum mining in Platreef; (2) Koedoeskop to Northam and Dwaalboom road – specifically for new cement kiln currently under construction at Dwaalboom; and (3) D1639 road – essential to platinum mine expansion at Northam.

The Waterberg IDP further states the roads that are currently on the tarring programme after the year 2010 and are of consequence to the mining sector. They include (1) completion of

the Mapela - Marken road; (2) linking Polokwane with Lephalale via Giklead and Marken; and reconstruction of R33 between Lephalale and Modimolle.

The key challenges facing Waterberg District regarding freight transport planning include:

- Lack of funding for implementation of projects identified in the Waterberg District Integrated Transportation Plan e.g. the reconstruction of R33
- Huge backlog of about 4 043 km (numbered roads only) road infrastructure
- Lack of enough funds to build new roads
- Lack of road safety improvements mechanisms
- Few strategic routes i.e. road and rail are suitable for freight
- Poor road condition and lack of connections

The Waterberg IDP states that for the freight industry to develop in the district the following interventions should be taken into consideration:

- The extension, maintenance and management of the R33 and the N11 as these roads are essential for linking resource extraction;
- Upgrading and reorientation of railway stock to improve connectivity with economic centers and service points; and
- Investment in road infrastructure in the localities connecting Botswana and South Africa.

#### 4.5.4.9 National Transport Master Plan 2005-2050 (2010)

The National Transport Master Plan is a framework that addresses the needs of transport infrastructure in the Province, taking into account land use, population and economic outlook of the Province.

The NATMAP process commenced in 2007 with data search and collection of the status of all modes of transport in the Province as well as population and land use characteristics. This phase was followed by the analysis of all data to identify trends and to determine the basis of future projections. The analysis phase was followed by the testing and evaluation of alternatives, with the final activity being the provision of preferred alternatives. The project was concluded with the preparation of an Action Agenda, which drew up a national and provincial goals achievement matrix.

- The Limpopo NATMAP Report stated the following with regards to freight transportation:
- Road freight volumes are expected to also increase over the NATMAP period, with major corridors handling increase general cargo. The report also envisaged some reduction in the localised transportation of coal;
- Rail freight volumes are also expected to also increase over the NATMAP period – with the Lephalale mainline being the prominent rail line;
- Some of the proposals from the NATMAP process include expansion of the N1 and the potential of a new transport infrastructure to address the needs in the Lephalale area.
- Other freight planning processes for road freight transport in Limpopo Province that are not being addressed include the issue of heavy vehicle haulage on provincial roads as the result of branch line service levels; the issue of toll road avoidance by means of provincial road usage and the consequent damage to provincial roads and selective use of sections of the toll routes; development of contingency plans, to resolve the issue of peak oil and possible future fuel shortage; improvement of systems and facilities to manage the transport of Dangerous Goods by road; development of strategies to promote intermodal transport and improve the usage of the rail system and planning to provide long term direct road access from the Limpopo mining areas to Richards Bay.

## 4.5.5 Freight Policy Assessment

The purpose of this section is to provide an assessment of existing policy that governs freight transport planning by highlighting their strengths, weaknesses, threats and opportunities. The SWOT assessment will be followed by the summary of a list of potential problem areas that should be considered during Phase 2 of the project.

### 4.5.5.1 Freight Policy SWOT Assessment

Table 4-10 presents an overview of aspects that have an impact on the realisation of current freight transport planning policy statement. Strengths, weaknesses, opportunities and threats (SWOT) with regard to transport infrastructure in Limpopo Province.

### 4.5.5.2 Key Freight Policy Challenges

The following key policy challenges have been identified:

- There is **lack of policy guidelines regarding road infrastructure improvements** to provide more definite collaboration between Government Spheres;
- There is **lack of co-ordination between National, Provincial and Municipal spheres** regarding road transport planning, maintenance and operations in the Province;
- **Lack of capacity to perform legislative functions** - policies, acts, frameworks are enacted at National and Provincial level but there is no mechanism or monitoring strategy to ensure that policy statements, legislation and objectives are effectively implemented;
- **Lack of legislation limiting Freight Transport to Designated National Routes** - the National Freight Logistics Strategy highlights that there should be legislation that will limit freight transport to designated national routes or measures such as pre-tolling should be used to counter the problem of abuse of provincial and regional roads;
- **Lack of Legislation with the Provision of Incentives for Mode Shift from Road to Rail** - the National Freight Logistics Strategy further highlights the lack of legislation providing incentives for mode shift from road to rail as a challenge for freight transport development. Legislative efforts should be made through the new proposed Rail Act to provide incentives to move freight back from the road to the rail mode, provided rail infrastructure and operations are sufficiently improved;
- **Lack of legislation compelling the provision for dedicated lanes for trucks on freight transport routes.** Currently heavy vehicles are mixed up with other vehicles on the roads. This results in conflicts which causes road traffic accidents.
- **Lack of legislation regulating the gathering and dissemination of transport data by the National Department of Transport, provinces, operators etc.** A draft Bill was prepared for the National Department of Transport but no progress has been made to take it through the required legislative processes.
- **Lack of legislation providing for the implementation of the planning, institutional and regulatory recommendations made in the "NATMAP" report.** A draft Bill (National Transport Planning and Implementation Bill) has been prepared and submitted to the National Department of Transport in 2011 but no progress has been made to take it further through the required legislative processes.

## NOTE

It is quite evident that over the years many policy frameworks, strategic frameworks, institutional amendments, legislative amendments have been produced with apparently no significant improvement in the regulation of overloading, the protection of the road infrastructure and road safety problems. These problems have existed for many years now and the time has come for all role-players involved to make a proper commitment to improving the existing situation by effectively protecting the road infrastructure, improving rail freight infrastructure and services, implementing professional law enforcement practises, providing the necessary capacity and training to all relevant institutions and by implementing the recommendations made in the NATMAP Report and other policy studies as soon as possible.

It is important to note that the NATMAP 2050 Report also identifies the need for legislative review, but identifies that the biggest problem from a legislative view is that policies and legislation are not implemented; pointing out that proper implementation could have a great effect.

The National Transport Planning and Implementation draft Bill has, amongst others, the following objectives:

- “Consider and provide for an integrated multimodal transport infrastructure facilities development and planning across all spheres of government. The planning elements relating to multi-modal infrastructure will be incorporated in the proposed Bill.
- Consider provision for mandatory disclosures of all contents of containers at all points of entry and exit to and from the Republic.
- To empower the Department to identify and provide for sources of funding and to harmonize the same in all spheres of government with regards to the Constitution, 1996, The Provincial Tax Regulation Process Act, The Public Finance Management Act, The Municipal Finance Management Act and the Municipal Fiscal Powers and Functions Act.
- To make an enforceable provision for transport data collection as and when required by the Department, and/ or other transport institution in the three spheres of governance during the National Population Census Survey.
- The proposals contained in NATMAP 2050 regarding the Multi-modal Policy Forum, and in particular consideration of the two options given, namely the options of a forum being established by legislation or informally as a non-statutory structure.
- To ensure that the structures established to undertake transport planning have full access to information from all custodians of relevant and or desired transportation information e.g.; SARS, STATS SA, and from the private sector to enable proper planning to be done.

It is therefore very important that the National Department of Transport proceeds with the enacting of this draft Bill which will lead to many improvements with regard to the above-mentioned problems and constraints identified in this report.

Table 4-10: Aspects Impacting on Freight Transport Legislative - SWOT Analysis

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
<b>SADC Protocol on Transport – Logistic Systems</b>	Regional	<p><b>Policy Statements:</b> Unified freight systems – documentation; communication, data processing and exchange facilities;</p> <p>Quality controls and assurance standards applicable to all modal transport operators;</p> <p>Enhancement of performance of rail and freight container information tracking systems;</p> <p>Processes for cargo security improvement. Bureaucracy due to systems of the different member states;</p> <p>Capacities of implementing agencies for the member states</p>	Political will to ensure cooperation during the implementation of Southern African logistical systems	<p>Bureaucracy due to systems of the different member states;</p> <p>Capacities of implementing agencies for the member states;</p> <p>Sustainable Public Private Partnerships;</p> <p>Achieving Legal Reform across the member states;</p> <p>Sustainable Committees;</p> <p>Sustainable corridor development across the complete corridor</p>
<b>National Land Transport Strategic Framework</b>	National	<p>Align freight transport logistics with economic and industrial development strategies</p> <p><b>Policy Statement</b> Promotion of freight transport industry within the limits of sustainable transport infrastructure;</p> <p>Improved conditions of employment and participation within the freight industry;</p> <p>Promote shift of freight from road to rail.</p>		<p>Lack of guideline for shifting of freight from road to rail;</p> <p>Lack of improved conditions of employment and participation within the freight industry;</p> <p>Poor transport infrastructure.</p>
<b>National Transport Policy</b>	National	<p>Provide safe, reliable, effective, efficient and fully integrated land freight transport operations and infrastructure.</p> <p><b>Policy Statement</b> Controlling operator fitness through the implementation of the Road Transport Quality</p>	<p>Promotion of road transport law enforcement and management of cross-border routes</p> <p>Promoting equitable competition in road transport;</p>	<p>Deficient current road traffic law enforcement relating to various aspects of freight transport.</p> <p>The Road Transport Quality System (RTQS) is regarded as too complicated and has not yet been fully implemented;</p>

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
		<p>System (RTQS),</p> <p>Establishing a monitoring system</p> <p>Undertaking cost recovery studies to determine and equitably allocate costs for the provision, management, operation, and maintenance of all freight transport infrastructure (including road, rail, port, and airport);</p> <p>Supportive of small and medium business;</p> <p>Establishing a formal consultative forum between government, public and private sectors, operators, and stakeholders;</p> <p>Road transport law enforcement and management of cross-border routes;</p> <p>Impose strict government regulations to control the transportation of hazardous materials and substances;</p> <p>Simplify the Road Transport Quality System RTQS, but not relax quality standards;</p> <p>Promote the entry of SMMEs to the road freight sector.</p>		
<p><b>Moving South Africa</b></p>	<p>National</p>	<p>Taken together, the customer needs and demand, national objectives, and sustainability requirements create a set of integrated performance objectives for the freight system into the future.</p> <p><b><u>Freight System Performance Objectives</u></b> Increase value to customers through increasing</p>	<p>Build density in the transport system by focusing freight flows in select corridors by supporting and reinforcing current trends to build the backbone of the system;</p> <p>Build economies of scale within the</p>	<p>Lack of support for export competitiveness; and</p> <p>Low levels of system sustainability.</p>

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
		<p>the competitiveness of businesses by improving reliability and transit time for freight;</p> <p>Lower transport system costs in order to increase profitability and sustainability in the transport industry;</p> <p>Decrease the distorting effects of cross-subsidisation so as to increasing the potential to reinvest;</p> <p>Promoting value-based competition over price-based competition by internalising externalities and decreasing the burden on the fiscus.</p>	<p>different modes by focusing the role of the modes, maximising scale economies within each mode and offering differentiated services where economically sustainable; and</p> <p>Improve competitiveness by removing obstacles, improving integration, ensuring sufficient reinvestment to maintain quality infrastructure and operations, restoring price and value signals between customers and providers and building an industry platform which drives differentiation and innovation.</p>	
<b>National Freight Logistics Strategy</b>	National	<p>Secure the sustainability by ensuring the adaptability of the sector to changes within the industry and the government and respond to challenges facing the freight sector;</p> <p>Develop, plan, implement, monitor and update strategies and programmes that enable further enhancement of infrastructure, systems and operations along freight corridors and sub-corridors including airports, border posts, intermodal facilities, pipelines, port facilities, rail network and roads;</p> <p>Improve the capacity of the system; and develop provincial freight scenarios for 2010.</p> <p>Reduce the transport and logistics related cost of doing business; and transit time.</p> <p><b>Policy Statement</b></p>	<p>National Freight Logistics Strategy responds to problems in institutional and regulatory frameworks, infrastructure, ownership management, operations, skills, financing structures and methodologies for the freight system.</p>	<p>Lack of legislation limiting freight transport to designated national routes;</p> <p>Lack of legislation with the provision of incentives for mode shift from road to rail;</p> <p>Legislative efforts should be made through the new proposed Rail Act to provide incentives to move freight back from the road to the rail mode, provided rail infrastructure and operations are sufficiently improved;</p> <p>Legislation should limit freight transport to designated national routes, or measures such as pre-tolling should be used to counter the problem of abuse of provincial and regional roads;</p> <p>Low levels of investment in certain infrastructural and operational equipment;</p>

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
		Address a number of issues that undermine the competitive advantage that South Africa enjoys and renders it less competitive and relevant in world markets		<p>Rigid management practices formed by supply-driven strategies; and</p> <p>Rigid costing approaches that are not customised.</p>
<b>National Freight Monitoring Framework</b>	National	<p>Address the challenges faced in capturing, processing and presenting freight information for intelligence and decision support to both the Department and its stakeholders</p> <p><b>Policy Statement</b> Form the basis from which to achieve complete freight transit and storage life-cycle insight using monitoring processes and technology to improve management, planning and regulatory functions of the Department and key stakeholders;</p> <p>Encompass all modes of transport e.g. road, rail, aviation, maritime and pipeline;</p> <p>Gain insight into the current landscape in terms of the available freight information across all modes of transport;</p> <p>Investigate challenges facing both the department and the respective stakeholders</p> <p>Investigate solutions available solutions globally and come up with recommendations</p>	<p>Ability to monitor freight overloading, licensing enforcement, identification of bottlenecks in freight traffic transport allowing for the mitigation of these issues;</p> <p>Ability to monitor integration of information captured with other existing systems to enable reliable decision-making and report capability;</p> <p>Ensure compliance with the Container Safety Initiative (CSI) and the International Ships and Port Security (ISPS) code for the profiling of cargo operators.</p>	<p>Overall data quality is poor</p> <p>Inconsistent data in terms of freight classification and various measurements</p> <p>No indications of freight origin and destination;</p> <p>Lack of Freight classification;</p> <p>Most of the data is related to provincial views and not to corridors;</p> <p>There are gaps in understanding the corridor performance including bottlenecks such as inter-modal depot waiting time and bottlenecks due to traffic congestion;</p> <p>There is no data in support of the above congestion and the challenge of re-routing and capacity planning is available;</p> <p>There is insufficient data for accurately monitoring what, why, when and where effectiveness is compromised; and</p> <p>No Just-in-time logistics data is available to establish where freight is and how to prioritize port space management.</p> <p>Customs do not want to stamp the CBRT's consignment notes due to the fact that Customs have changed their systems at the border posts.</p>

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
<b>National Road Traffic Act</b>	National		<p>Approach and conditions on transportation of dangerous goods specified;</p> <p>Where it is suspected that an offence was committed with regards to the mass of a motor vehicle, the vehicle will be subjected to weight measurement by means of a mass-measuring bridge or other mass measuring instruments and results thereof will be accepted as correct should there be no evidence to prove the contrary.</p>	<p>Absolute lack of law enforcement leads to overloading offender not being prosecuted;</p> <p>Traffic law enforcement officers are not properly trained to enforce overloading legislation;</p> <p>Fraud and corruption is rife amongst traffic and transport law enforcers.</p> <p>Lack of cooperation between Customs, CBRT and Limpopo law enforcers (Limpopo is responsible for overloading control and the CBRT is responsible for the enforcement of the RTQS;</p> <p>SADC countries' road traffic legislation is still not harmonised;</p> <p>The CBRT should be involved in the enforcement of overloading control.</p>
<b>Limpopo in Motion</b>	Provincial	<p>Develop effective coordinating measures for freight transport and maintain freight transport routes. Also identify infrastructure requirements for road freight operations</p> <p><b>Policy Statement</b> Ensure movement of goods by all modes within and across provincial boundaries, are effective, cost effective and controlled within a healthy competitive environment; and Ensure that all produce reaches the markets in time and in good quality and safe.</p>	<p>Identification of gaps with regard to safety and regulatory requirements for road freight operations</p> <p>Identification of infrastructure requirements for road freight operations</p> <p>Improvement of the general safety and security of trucking activities</p>	<p>Lack of road freight infrastructure requirements plan;</p> <p>Lack of road traffic safety law enforcement;</p> <p>No load control strategies Excessive overloading of trucks in Province</p> <p>Lack of development and maintenance of freight transport routes (road and rail infrastructure).</p>
<b>Limpopo Growth &amp; Development Strategy 2004 – 2014 (2007)</b>	Provincial	To raise the international competitiveness and investment rating of the Province, create employment opportunities, combine public and private sector contributions to development and	Seven industrial clusters envisaged to promote freight transport in the Province namely: Platinum mining cluster, coal mining and petrochemical cluster, Fruit	Scarcity of water in the Province. Since the formation and promotion of cluster development is aligned with a water resource and a management strategy to ensure optimal use

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
		<p>to align the interventions of various public development institutions for greater impact</p> <p><b>Policy Statement</b> Provides ample room for co-operative governance for the seven industrial clusters.</p>	<p>and vegetable clusters, logistic cluster, Red and white meat cluster and forestry cluster</p> <p>The upgrading of the road between Burgersfort and Polokwane, water source development education and skills development with specific reference to the mining sector;</p> <p>The approval for the expansion of the power station at Grootgeluk Coal Mine, water source development, education and skills development with specific reference to the chemical industry, and a rail link to Richards Bay in the long term;</p> <p>Improvements to logistical capacity and investment in plant biotechnology commercialisation of state farms, water resource development, rehabilitation of community irrigation schemes, skills development among emerging farmers and the encouragement of public-private partnerships with established commercial farmers</p>	<p>Lack of education and skills development with reference to mining sector, chemical industry and agricultural production</p>
<p><b>Capricorn District - IDP</b></p>	<p>Local</p>		<p>Polokwane is the logistical hub of the Province</p> <p>There are 4 development corridors that converge in Capricorn District namely: Trans-Limpopo Corridor, Phalaborwa Corridor, East-West Corridor and</p>	

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
			<p>Dilokong Corridor.</p> <p>These corridors are used to transport fuel, food and spare parts by road.</p>	
<b>Greater Sekhukhune District IDP</b>	Local		<p>Good transport infrastructure base</p> <p>Potential for primary and manufacturing sectors to the promotion of freight transport planning.</p>	Lack of economic diversification
<b>Mopani District IDP</b>	Local		<p>Rail is primarily used to transport goods in the Province;</p> <p>Mopani is situated within a number of strategic corridors in the Province which have potential to offer opportunities for freight development namely Ba-Phalaborwa Development Initiative (SDI), Tzaneen-Letaba Agricultural Hub and Giyani Sub-region</p>	
<b>Vhembe District IDP</b>	Local		<p>The N1 passes through Musina and is the main route used to transport fuel, goods and services and spare parts to Zimbabwe.</p>	<p>Poor road infrastructure</p> <p>Lack of formalised and reliable transport for perishable commodities</p> <p>High cost of transporting bulky goods</p> <p>Lack of identification and prioritization of roads that require upgrading</p> <p>Need for freight facilities at the border posts</p> <p>Lack of tapping into the agricultural potential opportunities with regard to agricultural production</p> <p>Declining of mineral resources</p>

KEY POLICY	SPHERE	OBJECTIVE & POLICY STATEMENTS W.R.T FREIGHT TRANSPORT	PROMOTERS	OBSTRUCTORS
				Lack of mining, agricultural and forestry value chain development and integration  Lack of diversification of the economic sector
<b>Waterberg District IDP</b>	Local		<p>Identification of roads within the district which are essential for the improvement of logistics and expanded mining include:</p> <ul style="list-style-type: none"> <li>• Gakgabudi through Mapela to Marken road – central to expanded platinum mining in Platreef;</li> <li>• Koedoeskop to Northam and Dwaalboom road – specifically for new cement kiln currently under construction at Dwaalboom;</li> <li>• D1639 road – essential to platinum mine expansion at Northam</li> </ul> <p>Extension, maintenance and management of the R33 and the N11 as these roads are essential for linking resource extraction;</p> <p>Upgrading and reorientation of railway stock to improve connectivity with economic centres and service points; and</p> <p>Investment in road infrastructure in the localities connecting Botswana and South Africa</p>	<p>Lack of strategic routes for transporting freight commodities;</p> <p>Lack of maintenance of essential routes for transporting freight commodities.</p>

## 4.6 Institutional Analysis

Freight transport planning, infrastructure management, regulation as well as industrial coordination and communication are guided by the type of institutional arrangement found in the Province.

This section of the report will provide an overview of current institutional arrangement that govern over freight transport in the Province, highlighting the key institutional players involved in freight transport in the Province. Furthermore an outline of the key issues that have been identified through research and stakeholder consultation will be discussed.

### 4.6.1 Institutional Reform

From a governmental point of view the term ‘institution’ can be interpreted in two different ways. Firstly it can refer to an organisational entity such as a ministry, *department* or an agency. Secondly the emphasis of an institution could lie with the formal and informal policy, rules, standards and regulations operating within or across organisational structures.

The term ‘organisational structure’ can be defined as a description of the types of coordination used to organise the actions of individuals and departments that contribute to achieving a common objective.

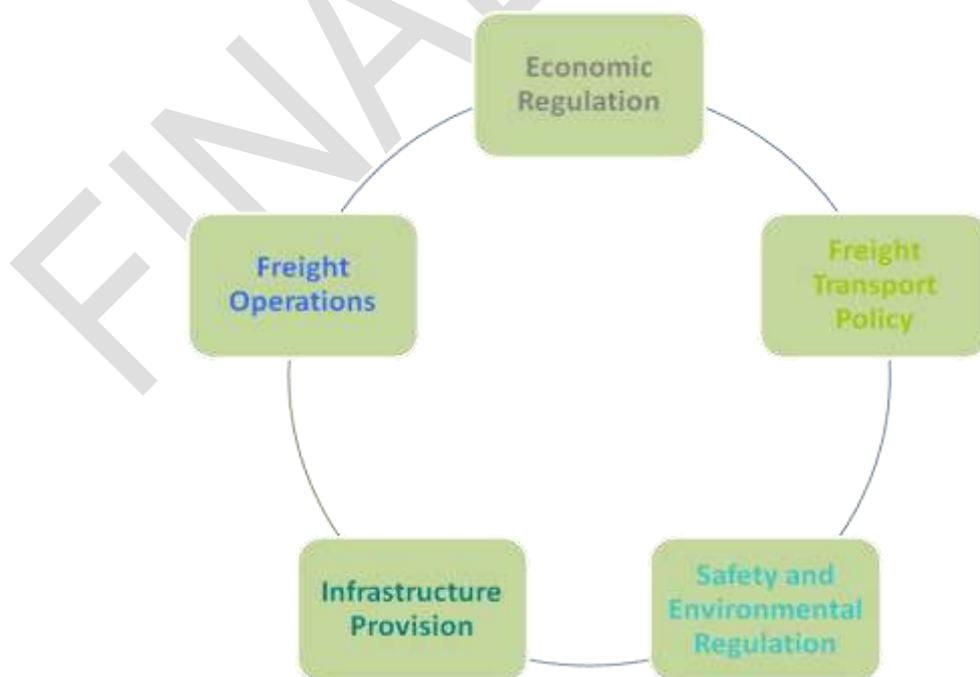
Institutions are therefore the means by which policy decisions are made effective. Policies without organisations capable and willing to implement them are not credible.

Bearing in mind the review undertaken in *Phase 1 Report: Status of Freight Transport in Limpopo* (which is pulled into this report) the purpose of this sub-section is to provide a framework for institutional arrangements that will facilitate the freight transport implementation plan is presented.

### 4.6.2 Institutional Arrangement

Figure 4-4 shows the area of expertise that governs freight transport in the Province.

Figure 4-4: Area of Expertise governing Freight Transport Institutional Arrangements



The institutions responsible within the area of responsibilities outlined in Figure 4-4 are as follows:

- The area of expertise listed in the figure cut across the modes of transport that exist in the Province, namely road, rail and air;
- For the Economic Regulation, the relevant organisations that cut across the three modes of transport operating in the Province (i.e. rail, road and air) include the Competition Commission, Department of Trade and Industry, South African Reserve Services and the Department of Transport;
- Freight transport policy are guided by:
  - Department of Transport and Transnet for the rail mode;
  - Department of Transport for the road mode; and
  - Department of Transport, Airport Company South Africa and the Air Traffic and Navigation Services for the air mode.
- Safety and Environmental Regulations are guided by:
  - Department of Environmental Affairs and Tourism (DEAT) and Rail Safety Regulator for the rail mode;
  - DEAT and the Road Traffic Management Corporation for the road mode and
  - DEAT and the South African Civil Aviation Authority for the air mode.
- Infrastructure is the jurisdiction of:
  - Department of State Enterprise and Transnet for the rail mode;
  - All sphere of Government and agencies appointed by the republic (i.e. South African National Road Agency and Road Agency Limpopo) and
  - All spheres of Government and their appointed agencies (i.e. Gateway Airports Authority Limited) for the air mode.
- Freight operations is the jurisdiction of:
  - Transnet for the rail mode;
  - All sphere of Government and private operators for the road mode and
  - All spheres of Government and private operators for the air mode.

Regulation is a statutory requirement of the national departments and their respective agencies. Furthermore it is observed that national government and their agencies are the main role players in the provision of infrastructure and operations. Provincial and local government as well as private operators are prevalent within the road and air modes.

The role of each key institution is discussed in the following section.

#### 4.6.3 Institutional Mandate and Role

Table 4-11 below outlines the key actors involved in freight and logistics sector in the Limpopo Province as well as their role in freight transportation.

Table 4-11: Relevance of Key Actors

INSTITUTION	MANDATE	ACT PERMITTING MANDATE	DIRECTORATE / DEPARTMENT / AGENCY	ROLE IN FREIGHT TRANSPORT	SOURCE OF FUNDING
<b>National Actors</b>					
<b>Department of Transport</b>	Policy Formulation and Strategic Planning	Constitution of South Africa (1996)	Branch: Logistics (under the Integrated Transport Planning Programme)	<ul style="list-style-type: none"> <li>Develops and coordinates the implementation of freight logistics strategies.</li> <li>Reviewing and implementing national freight logistics strategy.</li> <li>Development and updating a national transport database.</li> <li>Finalisation of the branch line strategy</li> </ul>	Monies appropriated by Parliament
			Programme: Rail Transport	<ul style="list-style-type: none"> <li>Facilitate and coordinate the development of sustainable rail transport policies, rail economic and safety regulation.</li> <li>Facilitate and coordinate the development of sustainable infrastructure development strategies and systems that reduces system costs and improves customer services.</li> <li>Monitor and oversee the Railway Safety Regulator.</li> <li>Monitor and oversee the implementation of integrated rail services.</li> </ul>	
			Programme: Road Transport	<ul style="list-style-type: none"> <li>Regulate road traffic management.</li> <li>Ensure maintenance and development of an integrated road network.</li> <li>Oversight of the road agencies and provincial road expenditure.</li> </ul>	
			Programme: Civil Aviation	<ul style="list-style-type: none"> <li>Improvement of air freight services.</li> </ul>	
<b>Transnet (Pty) Ltd</b>	Rail Infrastructure Provision and Rail Freight	South African Transport Services Act 9 of 1989	Rail Engineering	<ul style="list-style-type: none"> <li>Ensure upgrading and maintenance of all main lines</li> </ul>	<ul style="list-style-type: none"> <li>Profit raised due to commercial operations;</li> <li>Loans</li> </ul>
			Rail Freight	<ul style="list-style-type: none"> <li>Plan and manage all rail based freight</li> </ul>	

INSTITUTION	MANDATE	ACT PERMITTING MANDATE	DIRECTORATE / DEPARTMENT / AGENCY	ROLE IN FREIGHT TRANSPORT	SOURCE OF FUNDING
	Operations			<ul style="list-style-type: none"> <li>movement;</li> <li>• Work in partnership with special clients (mining)</li> <li>• Development of new routes and creating an conducive environment for investment on existing routes</li> <li>• Managing operational safety</li> </ul>	
<b>South African National Roads Agency Limited (SANRAL)</b>	National Road Infrastructure Provision	South African National Road agency Limited and the National Roads Act 7 of 1998		<ul style="list-style-type: none"> <li>• Plan, design, construct, operate, manage, rehabilitate and maintain national roads;</li> <li>• Ensure collection of traffic and cross border information on national roads;</li> <li>• Ensure law enforcement and overloading on national roads;</li> <li>• Ensure incident management on national roads;</li> <li>• Generate revenues from the development and management of its assets</li> </ul>	<ul style="list-style-type: none"> <li>• Capital invested in or lent to the Agency;</li> <li>• Levies on petrol and distillate fuel;</li> <li>• Loans;</li> <li>• Fees from tolling;</li> <li>• Monies appropriated by Parliament</li> </ul>
<b>Road Traffic Management Corporation (RTMC)</b>	Regulation	Road Traffic Management Corporation Act 20 of 1999	Traffic Engineering Information and Research	<ul style="list-style-type: none"> <li>• Manage and control the collection, investigation and recording of road crash data on a national basis and manage and oversee the National Incident Management Programme-</li> <li>• Provide reliable and accurate traffic information</li> <li>• Administer the Adjudication of Road Traffic Offences</li> </ul>	<ul style="list-style-type: none"> <li>• Monies from transaction fees as a result of sale of services;</li> <li>• Penalties and fines;</li> <li>• Monies appropriated by Parliament</li> </ul>
<b>Railway Safety Regulator (RSR)</b>	Regulation	National Railway Safety Regulator Act 16 of 2002	Rail Safety Regulation and Safety Assurance Division	<ul style="list-style-type: none"> <li>• Oversee safety in railway transport,</li> <li>• Oversee safety in the railway transport industry;</li> <li>• Promote the use of rail mode through the improved safety performance;</li> <li>• Develop rail regulatory framework through the development of regulations and standards for safe railway operations</li> </ul>	<ul style="list-style-type: none"> <li>• Monies appropriated by Parliament;</li> <li>• Fees from Safety Permit Applications;</li> <li>• Donations and Contributions</li> </ul>

INSTITUTION	MANDATE	ACT PERMITTING MANDATE	DIRECTORATE / DEPARTMENT / AGENCY	ROLE IN FREIGHT TRANSPORT	SOURCE OF FUNDING
				<ul style="list-style-type: none"> <li>• Monitor and ensure compliance to rail regulatory framework;</li> <li>• Collect and disseminate information relating to safe railway operations;</li> <li>• Promote the harmonisation of the railway safety regime of South Africa with Southern African Development Community (SADC) railway operations</li> </ul>	
<b>Cross Border Road Transport Agency (CBRTA)</b>	Regulation	Cross Border Road Transport Act 4 of 1998	Regulation and Law Enforcement Divisions	<ul style="list-style-type: none"> <li>• Regulate cross border road transport;</li> <li>• Facilitate cross border operations;</li> <li>• Enforce law cross border operations;</li> <li>• Advise the Minister of Transport on matters affecting cross border</li> <li>• Control and regulate cross border road transport between RSA and other States through a permit system</li> </ul>	<ul style="list-style-type: none"> <li>• Monies collected from issuing of cross-border permits;</li> <li>• Monies collected from fines;</li> <li>• Monies appropriated by Parliament;</li> <li>• Donations and Advisory fees</li> </ul>
<b>South African Civil Aviation authority (SACAA)</b>	Regulation	South African Civil Aviation Authority Act 40 of 1998	Aviation Safety Promotion; Air Safety Operations and Air Safety Infrastructure	<ul style="list-style-type: none"> <li>• Control the functioning of the civil aviation industry;</li> <li>• Regulate the functioning of the civil aviation industry;</li> <li>• Oversee the functioning of the civil aviation industry;</li> <li>• Promote the functioning of the civil aviation industry</li> </ul>	<ul style="list-style-type: none"> <li>• User Fees;</li> <li>• Levies;</li> <li>• Government funding.</li> </ul>
<b>Air Services Licensing Council (ASLC)</b>	Regulation	Air Services Licensing Act 115 of 1990		<ul style="list-style-type: none"> <li>• Control functioning of the domestic air transport services;</li> <li>• Regulate functioning of the domestic air transport services;</li> <li>• Monitor functioning of the domestic air transport services;</li> <li>• Promote functioning of the domestic air transport services</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding.</li> </ul>

INSTITUTION	MANDATE	ACT PERMITTING MANDATE	DIRECTORATE / DEPARTMENT / AGENCY	ROLE IN FREIGHT TRANSPORT	SOURCE OF FUNDING
<b>Air Traffic and Navigation Services Company (ATNS)</b>	Regulation	Air Traffic and Navigation Services Company Act 45 of 1993		<ul style="list-style-type: none"> <li>• Management of air services and air navigation infrastructure;</li> <li>• Operation of air services and air navigation infrastructure;</li> <li>• Development of air services and air navigation infrastructure;</li> <li>• Maintenance of air services and air navigation infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Air traffic service levies;</li> <li>• Loans</li> </ul>
<b>Provincial Actors</b>					
<b>Department of Roads and Transport</b>	Coordination	Constitution of South Africa (1996) and the National Land Transport Act (2010)	Public and Freight Projects Programme	<ul style="list-style-type: none"> <li>• Lead the implementation of the freight strategy</li> <li>• Regular management of the freight databank</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding.</li> </ul>
<b>Department of Roads and Transport</b>	Coordination	Constitution of South Africa (1996) and the National Land Transport Act (2010)	Transport Infrastructure Programme	<ul style="list-style-type: none"> <li>• The Directorate focuses on the maintenance of roads and roads related infrastructure.</li> <li>• The Chief Directorate is also responsible for the implementation of the EPWP programme</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding</li> </ul>
<b>Department of Roads and Transport</b>	Coordination	Constitution of South Africa (1996) and the National Land Transport Act (2010)	Transport Regulations Programme	<ul style="list-style-type: none"> <li>• Chief Directorate is responsible for the provisioning of traffic control and traffic policing, road safety education and awareness, transport administration and licensing and traffic training services.</li> <li>• Traffic control, traffic policing and overload control services are rendered by Traffic Stations and Traffic Control Centres in the different districts.</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding</li> </ul>
<b>Road Agency Limpopo</b>	Provincial Road Infrastructure Provision			<ul style="list-style-type: none"> <li>• Plan, design, construction and maintenance of road infrastructure;</li> <li>• Sourcing alternative source of funding for road infrastructure investment;</li> <li>• Data collection on corridors, freight</li> </ul>	<ul style="list-style-type: none"> <li>• Government funding.</li> </ul>

INSTITUTION	MANDATE	ACT PERMITTING MANDATE	DIRECTORATE / DEPARTMENT / AGENCY	ROLE IN FREIGHT TRANSPORT	SOURCE OF FUNDING
				movements and general information on the road network.	
<b>Gateway Airports Authority Limited (GAAL)</b>	Provincial Air Infrastructure Provision			<ul style="list-style-type: none"> <li>Plan, design, construction and maintenance of air infrastructure at Polokwane International Airport;</li> <li>Assist in the implementation of the Limpopo Air Cargo hub</li> </ul>	<ul style="list-style-type: none"> <li>Government funding.</li> </ul>
<b>Department of Economic Development</b>	Provincial Economic Regulation		Integrated Economic Development Services and Trade and Industry Development	<ul style="list-style-type: none"> <li>Promotion of economic planning</li> <li>Lead and integrate provincial local economic development planning</li> <li>To stimulate economic growth through industry development, trade and investment promotion</li> </ul>	<ul style="list-style-type: none"> <li>Government funding.</li> </ul>

#### 4.6.4 Institutional Review

A review of characteristics that have an impact - both positive and negative, on institutions to effectively carry out their mandate in freight transport planning was conducted. Table 4-12 highlights the outcome thereof.

Table 4-12: Review of Aspects impacting on Institutional Mandates

AREA OF EXPERTISE	INSTITUTION	PROMOTERS	HINDERERS
Freight Transport Policy	NDoT	<ul style="list-style-type: none"> <li>Structuring of institutions to manage corridor development;</li> <li>Deployment of Agencies to carry out its competencies.</li> </ul>	<ul style="list-style-type: none"> <li>Functions of road provision between various levels of government are confusing and fragmented.</li> <li>Poor coordination between the freight transport sector impedes on the efficiency and effectiveness of the sector;</li> <li>Lack of directive for rail, road and air freight operations;</li> <li>Absence of freight transport strategies at the provincial level;</li> <li>Lack of infrastructure funding through user charges and public/private sector investments.</li> <li>Government ownership of transport operations impedes on the intentions of government policy.</li> <li>The split responsibilities of Transnet to NDoT and as well as the Department of State Enterprise not conducive to efficient rail freight transport management.</li> </ul>
Regulation - Road	Road Traffic Management Corporation (RTMC)	<ul style="list-style-type: none"> <li>Capacity to enforce law for road traffic offences;</li> <li>Collection of accurate traffic data at a national level.</li> </ul>	<ul style="list-style-type: none"> <li>Dependence on other organisations to perform critical tasks will impact on functional mandate;</li> <li>Need for vigorous traffic safety measures;</li> <li>Vehicle overloading and breaches of road safety regulations continue to cause problems;</li> <li>Implementation of the Road Transport Quality System (RTQS) is rendered ineffective by lack of trained personnel, inadequate numbers of inspection staff, infrequent road side inspections and operator disregard for the requirements to maintain vehicle condition.</li> </ul>
Regulation -	Railway	<ul style="list-style-type: none"> <li>Safety plans</li> </ul>	<ul style="list-style-type: none"> <li>Underinvestment in rail transport</li> </ul>

AREA OF EXPERTISE	INSTITUTION	PROMOTERS	HINDERERS
Rail	Safety Regulator	<ul style="list-style-type: none"> <li>improving on rail freight operations; Promoting the use of rail transport through improved safety performance in the sector.</li> </ul>	<ul style="list-style-type: none"> <li>over extended periods of time which has resulted in the poor safety performance;</li> <li>Lack of integrating safety programme into the full life cycle of all rail capital improvement;</li> <li>The absence of a national rail safety information system;</li> <li>Resource capacity to undertake occurrence investigations, safety management system audits; technical audits and inspections.</li> </ul>
Regulation - Road	CBRTA	<ul style="list-style-type: none"> <li>Regulation and recording of cross-border operations.</li> <li>Reduces operational costs for cross-border transport industry;</li> <li>Regulates competition in terms of cross border road transport.</li> </ul>	<ul style="list-style-type: none"> <li>Coordination between institutions operating at the border posts;</li> <li>Lack of bilateral strategies between affected neighbouring states;</li> <li>Long cross-border processing that are contributing to long waiting periods at the two border posts;</li> <li>Harassment and intimidation from operators originating from neighbouring states;</li> <li>Issuing of permits by provincial department;</li> <li>Lack of facilities at border posts – particularly parking facilities;</li> <li>Threat to safety of goods and persons at border posts;</li> <li>Lack of coordination with Justice Department regarding withdrawal of fines</li> </ul>
Infrastructure Provision - Rail	Transnet	<ul style="list-style-type: none"> <li>Capacity to develop new rail routes and maintain existing ones.</li> <li>With significant investment in rail freight, pressure on road infrastructure will be reduced where products such as coal could be transported by rail</li> </ul>	<ul style="list-style-type: none"> <li>No efficient rail freight system in place;</li> <li>Lack of sufficient investment in rail infrastructure development will continue to increase the strain on the use of road freight as an alternative for transporting goods;</li> <li>Railways are short of qualified and experienced staff, in maintenance, operations, planning, management and engineering.</li> </ul>
Infrastructure	SANRAL	<ul style="list-style-type: none"> <li>Capacity to plan,</li> </ul>	<ul style="list-style-type: none"> <li>The lack of legislation for provision</li> </ul>

AREA OF EXPERTISE	INSTITUTION	PROMOTERS	HINDERERS
<b>Provision – Road</b>		<ul style="list-style-type: none"> <li>design, construct and maintain national roads; Ability to collect traffic and cross-border data for future infrastructure planning purposes;</li> <li>Generation of revenue to be used for other road infrastructure development projects;</li> <li>Extensive road network across South Africa is one of the major factors that support the growth of the freight transport industry.</li> </ul>	<ul style="list-style-type: none"> <li>for dedicated funding sources for national roads, provincial and municipal road;</li> <li>Due to the notion that national roads were prioritised, provincial and municipal roads are not in the best of condition.</li> </ul>
<b>Economic Regulation</b>	DTI, SARS, NDoT	<ul style="list-style-type: none"> <li>Stimulation of economic growth through the promotion of industry development, trade and investment in the sector.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of sharing of freight related information;</li> </ul>
<b>Coordination</b>	Limpopo Roads and Transport		<ul style="list-style-type: none"> <li>Lack of freight transport planning</li> <li>Lack of effective coordination</li> </ul>

### 4.6.5 Key Freight Transport Institutional Challenges

The following are key challenges hampering proper functioning of freight transport institutions in the Province:

#### 1. Lack of Integrated Planning

Overall, there appears to be no clear process by which local economic strategies and projects are linked to transport planning – i.e. no mechanism by which projects are assessed for their transport requirements and impacts, and no process by which local strategies are aggregated and coordinated from a transport planning perspective.

*With corridor planning across Provinces (i.e. Mpumalanga, Gauteng and North West Provinces) road maintenance and upgrades do not appear to be coordinated across Provinces on the main road corridors. Furthermore maintenance timing and upgrade activities are often poorly coordinated, and that freight transport use is generally not taken into account when maintenance schedules are developed.*

*Economic planning versus transport planning:* There appears to be some level of interaction between the relevant institutions when it comes to aligning economic planning and transport planning. However there seems to be a lack of coordination at a project level (i.e. coordination exists at a strategic level and not at overall project level).

#### 2. Lack of Freight Transport Expertise and Limited Local Capacity

The National Freight Logistics Strategy indicated the limited knowledge and expertise in freight issues within government departments outside of the national government as a concern.

Limpopo Province currently lacks sufficient capacity to address freight transport issues on a strategic or technical level, with the vast majority of its resources focused on public transportation.

As a result, there has been virtually no research to address freight related issues. Some of the challenges include a lack of sufficient funds for purposes of building capacity; limited access to key officials, limited stakeholder consultation and a lack of action on key decisions.

At a local level, the capacity constraints are even greater and the challenges more fundamental.

#### 3. Lack of Freight Transport Information

One of the main challenges to freight transport planning has been the lack of information on traffic volumes in the Province. Currently, planners are operating with the 2006 traffic census data. This has major implications for road upgrade and maintenance planning. This issue needs to be addressed by regular updating of the Limpopo Freight Transport Databank.

The National Transport Master Plan (NATMAP) simulated freight traffic volumes on road and freight routes of national importance, taking into account potential future land use. The outcomes of the NATMAP project are practical in guiding the development of freight transport strategies in the Province; however the updating of the model needs continuous updating of the freight traffic information to validate simulation developed.



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## 4.6.6 A Framework for Institutional Reform

### 4.6.6.1 Review of Assigned Functional Responsibilities of the Freight Transport Sub-Directorate

According to the Department of Roads and Transport's website (<http://www.ldrt.gov.za/>) the main management functional areas of the **Freight Transport sub-directorate** include **planning, developing, regulating** and **facilitating** the provision of freight transport services and infrastructure.

The **planning** function should embrace the overall and detail planning aspects of freight transportation and should include infrastructure planning, operational planning, the creation of appropriate institutional arrangements, inter-modality, human resources and specific provision for districts within the provincial jurisdiction.

The **development** function should give effect to the results or outcomes of the planning phase involving the implementation of freight-related projects. This may involve the physical construction of infrastructure, commissioning or putting into operation any freight transportation sub-system, a project, or research programs.

Although **regulation** is a statutory requirement of the National Department, this function within the provincial department should be as wide as possible with 'to be controlled by rule' at one end and '*an authoritative direction*' at the other side of the spectrum.

**Facilitation** of freight transport needs to ensure a smooth and seamless operation of the systems as well as in the delivery of freight transport services.

One aspect that needs to be reconsidered by the Department is its role in the promotion of freight transport services in the province. **Promoting** is a basic function which normally sets the scene in any enabling instrument such as a policy, a white paper or an act of parliament. The function of promotion can be described as to further or encourage to progress or existence or to support an activity. In terms of transport and transportation systems it can be related to the establishment of an environment conducive to the planning, development, implementation, monitoring and regulation of infrastructure and operational systems. Promotion therefore deals with the creation of an enabling environment which will allow freight transport to function, develop and prosper as a derived demand from trade and socio-economic needs.

### 4.6.6.2 Institutional Arrangements Supporting its Functional Responsibilities

In order to gain some understanding of the spectrum of management functional responsibilities that need to be entrusted to the Freight Transport Sub-directorate a summary of the key responsibilities is provided under the five functional areas mentioned above:

#### Planning and Development

Planning and development responsibilities may include some or all of the following items:

- Formulation of a Freight Transport Strategy consisting of transport and mode-specific plans;
- Adopt the principles of economic and financial sustainability and viability as well as environmental sustainability in all planning activities;
- Pro-active engagement with land-use planning;
- Perform detailed planning and design based on appropriate guidance material;
- Environmental impact assessments;
- Incorporate intelligent transportation systems into planning analysis, for example in the case of road safety;

- Financial planning and the determination of financial resources, including development partners;
- Identification of development projects and the preparation of business plans;
- Project procurement in accordance with the necessary regulations and procedures;
- Management and execution of development projects;
- Reporting systems;
- Monitoring and evaluation (performance measurement tools);
- Skills development and training for transport planning and development.

### Operation and Maintenance

Responsibilities to consider may include:

- Institutional arrangements for operators of transport infrastructure;
- Operations management and procedures;
- Facilitating market entrance;
- Promoting private sector participation and service delivery;
- Performance measurement;
- Establish and perform maintenance and rehabilitation programs such as road management and maintenance systems;
- Introduce other infrastructure asset protection measures such as weigh bridges for overloading control;
- Implement transport safety and security programs;
- Enhance consumers' interests;
- Apply environmental management plans on transport facilities and operations;
- Skills development and training in transport operations and maintenance activities.

**This functional areas needs to be integrated with existing functional areas in the Department (i.e. Roads Infrastructure & Maintenance and Road Traffic and Safety).**

### Logistics and Facilitation

Responsibilities normally associated with logistics and facilitation includes:

- Facilitation measures on and at transport infrastructure facilities with emphasis on users' interests;
- Special measures to facilitate Limpopo's land-locked status;
- Promote and expand the transport corridor concept;
- Port of entry and cross-border facilitation;
- Management of inter-modality and modal integration;
- Introducing information and incident management systems;
- Search and rescue operations;
- Adoption of regional trade facilitation programs relating to transport.

**This functional areas needs to be integrated with existing functional areas in the Department (i.e. Road Traffic and Safety) as well as external institutions (i.e. NDoT, CBRTA, SARS)**

## Regulation

Responsibilities relevant under regulation are:

- Establish independent regulatory institutions or authorities with respect to market structure (market entry/exit), safety and security, and market performance regulation with clearly defined mandates;
- Ensure that transport safety and security regulation shall be applied to all providers of transport infrastructure and services;
- Regulators should make rules on, lay down principles for and enforce minimum usability standards applicable to that provider or category of provider;
- Ensure that the regulatory regime is provided with appropriate enforcement powers such as investigative, remedial, punitive and monitoring (auditing) competencies;
- Instil the concept of self-regulation where ever possible;
- Although it would advisable that regulation should be financed from the industry they regulate, government may contribute to regulators' income from a public interest perspective.

**This functional areas needs to be integrated with existing functional areas in external institutions (i.e. DEAT, Rail Safety, Road Traffic Management Corporation, South African Civil Aviation Authority)**

## Promotion of Transport

The promotional responsibilities may include:

- Policy review, development and formulation and strategic planning for freight transport in general as well as for individual modes of transport;
- Progression of a legal framework consisting of appropriate legislation, rules, regulations and practices;
- Implement standards and procedures for transport planning, design, construction, operation, maintenance and training relating to all applicable modes of transport;
- Ensure transport planning is integrated and coordinated with the national economic activities on the basis of an integrated transport development plan which also allows for inter-modality and modal integration;
- Affirm a funding policy framework for the development, operation and maintenance of freight transport infrastructure;
- Establish appropriate organisations and management entities to ensure effective and efficient execution of assigned functions and responsibilities;
- Actively support district integration of transport and transport systems by participating in district transport initiatives;
- Lay the foundations for quality skills development and training programs to be implemented in the other functional areas;
- Initiate research and development programs on selected freight transport matters;
- Engage the private sector in freight transport planning initiatives; and,
- Give effect to the principle of community participation through the establishment of community consultation forums.

#### 4.6.6.3 Capacitating the Proposed Freight Transport Planning Sub-Directorate

The process of capacity development is intended to enable the organisation to move from an existing state to a higher state of capacity. Under best practices for capacity development the focus on capacity is as follows:

##### Individual Capacity

Individual capacity refers to specific attributes enabling individuals to perform functions, make decisions and ensure these are implemented in an effective manner. Aspects of relevance here are normally referred to as human resources and they include:

- **Staff Structure:** A distinction should be drawn between the approved staff establishment consisting of a fixed number of posts and the number of the personnel filling those posts and whose names would appear on the staff register for purposes of remuneration and other human resources arrangements. The difference between the number of approved staff structure posts and the number of those posts actually filled provides an accurate indication of the number of vacant posts, and which reflects on the current capacity of any organisation.

The approved staff establishment can furthermore be categorised into different generic groupings such as: (1) managerial staff including managers at different levels and selected supervisors which have acquired some managerial skills; (2) technical staff which include personnel with technical qualifications; (3) research and development staff; and, (4) skilled and unskilled workers required to perform various tasks at the work place.

From these groupings it is possible to more accurately establish the location of staff weaknesses in terms of posts filled.

- **Staff Capabilities:** The strength of an organisation normally lies with the level and quality of formal and informal training, the skills acquired in a particular work environment and the extent of appropriate experience gathered over a period of time. A further strength lies with the manner in which a particular employee could apply him/herself in the field in which training was provided and to be able to put theory into practice.
- **Training and Development:** Training and skills development is the lifeline of any organisation and should be effectively and purposefully managed at all levels in the organisation. The organisation should have a standing training program based on a proper assessment of the training needs of the organisation. Thereafter a dynamic and structured training program fulfilling training needs over the short and longer term should be implemented. The training program should allow for external formal training by accredited training institutions, as well as on-the-job training supported by refresher courses. Not much information could be gathered on training and development in the transport sector.

##### Institutional Capacity

Institutional capacity refers to institutional levels, focusing on the overall performance and functional capabilities of an organisation, access to finances, information technology, infrastructure and other resources, its organisational structure and its ability to adapt to change.

- **Organograms:** Organograms (also organisational charts or structures) illustrating the structure of all the organisations. These diagrams show the relationships and the relative rank of its parts and positions/posts.
- **Financial Sources:** It is essential that adequate financial provision be made by management on an on-going basis to fund the training needs of the organisation. Training should be a standing item on the annual budget. Management should also

explore the possibilities of external financial aid for training purposes. Various financial resources portfolios applicable to particular organisations have been referred to.

### Systemic Capacity

Systemic capacity is concerned with the creation of 'enabling environments'. This includes policies, rules and plans, economic, regulatory and accountability frameworks within which the institutions and individuals operate. Relationships and processes between institutions, both formal and informal, as well as their mandates, are important.

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## 5. Limpopo Freight Transport Implementation Plan

### 5.1 Introduction

An Implementation plan is a management tool for a package of measures, designed to assist implementation agents to manage and monitor implementation effectively. It is standard for an implementation plan to be:

- Succinct but not to the point that important information is buried;
- Jargon free – it should be capable of being understood by everyone using them;
- Based on a sound programme logic, presenting a clear line of sight from the original proposal and the Departmental expectations;
- Clear on timeframes, especially where there are interdependencies with other programmes or measures or critical requirements; and
- Clear on the decision pathways forward.

Implementation plans are therefore intended to be scalable and flexible; reflecting the degree of urgency, innovation and complexity. This section of the report therefore provides an implementation plan for Limpopo Freight Transport.

### 5.2 Implementation Plan

The proposed implementation plan for the Limpopo Freight Transport Strategy is specified in Table 5-1. The table specifies the project with a description, purpose, proposed Implementation agency, Limpopo Economic Growth and Development Strategy Pillar that the project aligns with, the impact of the project within that specific pillar and the estimated high level cost (where it could be determined) in million rands.

Table 5-1: Limpopo Freight Transport Implementation Plan

PROJECT NO.	PROJECT	PURPOSE	PROPOSED IMPLEMENTATION AGENT	LEGDP PILLAR ASSOCIATED WITH PROJECT	IMPACT OF PROJECT PER PILLAR	CLUSTER (GEOGRAPHIC)	TIMELINE	PROJECT COST (R) Million
<b>BORDER POST PROJECTS</b>								
1	Improvement infrastructure facilities and layouts so as to provide adequate capacity through the liaison of Government departments, CBRTA (BB Border)	Increase capacity at the border posts and thereby ease congestion of vehicles crossing at the border	Cross Border Road Transport Agency (CBRTA)	Public Infrastructure Investment	Generate job opportunities for local people	INF (VM)	Short	To be determined in detail study.
2	Increasing number of agents to operate at the border for the full duration of operations	Ease congestion at the border	Cross Border Road Transport Agency (CBRTA)	Enterprise Development	Generate job opportunities for local people	PI (VM)	Short	Operational cost. To be determined in detail study.
3	Operating the border for 24 hours (Groblersbrug Border)	Ease congestion at the border	Cross Border Road Transport Agency (CBRTA)	Enterprise Development	Generate job opportunities for local people	PI (WL)	Short	Operational cost. To be determined in detail study.
4	Deployment of sufficient traffic personnel to deal with heavy traffic volumes (BB & Martins Drift Borders) –	Ease the flow of traffic at the border	LDRT	Enterprise Development	Creation of job opportunities and provision of skills to build a prosperous future	SER (VM, WL)	Short	Operational cost. To be determined in detail study.
5	Standardization of Customs excise documentation for freight operators across SADC Region (Groblersbrug border)	Standardization of relevant border post documentation to aid movement across SADC	Cross Border Road Transport Agency (CBRTA)	Regional Economic Development	Limit trade barriers and facilitate trade between South Africa and her Neighbouring Countries thereby enhance economic development	SER, (VM)	Medium	Operational cost. To be determined in detail study.
6	Standardization of Customs excise documentation for freight operators across SADC Region (Beit Bridge border)	Standardization of relevant border post documentation to aid movement across SADC	Cross Border Road Transport Agency (CBRTA)	Regional Economic Development	Limit trade barriers and facilitate trade between South Africa and her Neighbouring Countries thereby enhance economic development	SER, (WL)	Short	Operational cost. To be determined in detail study.
7	Development of systems and processes to ensure efficient one-border post operation	Enhance communication and training so as to improve service delivery in transportation of cross-border freight commodities aid implementation of one-border post	LDRT and NDoT	Education and Skills for the Economy	Promote Economic Development	SER (VM and WL)	Medium / Long term	Operational cost. To be determined in detail study.
				Enterprise Development	Equipping people with skills as means for building a prosperous future			
8	Feasibility of a One-stop border Post at Beit Bridge	Improve efficiency and reduce delays	LDRT and NDoT	Regional Economic Development	Sustain economic growth for the province	INR, SER, PI (VM)	Short	R9million
9	Design of a One-stop border Post at Beit Bridge						Short	R25m
10	Construction of a One-stop border Post at Beit Bridge		PPP				Medium	R360m
11	Operate of a One-stop border Post at Beit Bridge		PPP				Medium	Operational cost. To be determined in detail study.
12	Development of One Stop Border Post (Groblersburg Border)	Improve efficiency and reduce delays	Limpopo & DOT	Regional Economic Development	Sustain economic growth for the province	INR, SER, PI (VM)	Long	R615.0
<b>TRAFFIC CONTROL PROJECTS</b>								
13	Investigation into the reasons for closure of existing TCC and Approach to their Optimisation (Vivo, Northam, Groblersbrug)	To increase efficiency curb overloading on the escape routes	LDRT (Traffic)	Enterprise Development	Creation of job opportunities and provision of skills to build a prosperous future	SER (V, S, W, M, C)	Short	Operational cost. To be determined in detail study.
14	Monitoring and Enforcement Plan of Escape routes	To increase efficiency curb overloading on the escape routes	LDRT (Traffic)	Enterprise Development	Creation of job opportunities and provision of skills to build a prosperous future	SER (V, S, W, M, C)	Short	Operational cost. To be determined in detail study.
14	Procurement of Weigh in motions scales for Rathoke, Makhado, Groblersbrug and Mooketsi TCCs as well as portable weighing scales for escape routes	Assist in effective overload control and curbing overloading at escape routes	LDRT (Traffic)	Public Infrastructure Investment	Preserve the road infrastructure	SER (W, V, S, C, M)	Short	R50.0
15	Feasibility Study for new TCCs along R33, R37	To monitor freight movement and	LDRT (Traffic)	Public	Preservation of public infrastructure	INF, SER, PI (W, S,	Short	R70.7

PROJECT NO.	PROJECT	PURPOSE	PROPOSED IMPLEMENTATION AGENT	LEGDP PILLAR ASSOCIATED WITH PROJECT	IMPACT OF PROJECT PER PILLAR	CLUSTER (GEOGRAPHIC)	TIMELINE	PROJECT COST (R) Million
	(Dilokong Corridor) and R37	preservation of emerging freight corridors		Infrastructure Investment	Pull in safety and security impact	M)		
16	Development of a maintenance plan for the weighbridges	To increase efficiency at TCCs	LDRT (Traffic)	Public Infrastructure Investment	Preserve the facility for longevity	SER	Medium	R2.0 (per TCC)
<b>INCIDENT MANAGEMENT SYSTEM</b>								
17	Extent the IMS to other freight corridors	To improve of response on accidents and hazmat spillage on routes with high freight volumes	LDRT (Traffic)	Public Infrastructure Investment  Safety and Security	Ensuring safety of local people in case of accidents	INFR / SER (areas)	Short – Medium	Approximately R2.5m for planning. Operational Cost to be determined in tender stage.
<b>HAZMAT PROJECTS</b>								
18	Development, Monitoring and Enforcement of a Hazmat Routes Plan	To limit impact of HAZMAT-related accidents and ensure compliance with the HAZMAT regulations	LDRT (Traffic)	Safety and Security Programme	Ensuring safety of local people in case of accidents	INFR, SER (areas)	Short - Medium	To be determined in detail study in conjunction with local government where detail by-pass routes at towns are required.
<b>RAIL FREIGHT PROJECTS</b>								
19	Alignment with Transnet's branchline strategy	Ease of transportation of some commodities by road	Transnet	Public Infrastructure Investment	Creation of job opportunities for local people	INF (V, S, W, M, C)	Short	To be determined in detail study.
20	Feasibility Study for Intermodal facilities at Musina and	Ease of transportation of some commodities by road					Short	To be determined in detail study.
21	Lephalale - Thabazimbi line upgrade	Upgrade to 25kv and provide intermediary passing loops to provide increased operational capacity						R410.6
22	Vaalwater - Modimolle rebuild and reopen line	Rebuild to 25kv and reopen line						R666.0
23	Northam – Boshhoek line upgrade	Upgrade by extending passing loops and providing intermediate passing loop to allow for longer trains and electrify to 25kv to reduce headways.						R81.0
24	Thabazimbi - Northam line upgrade	Upgrade by providing passing loops and intermediate passing loops to allow for longer trains and reduce headways.	Transnet	Public Infrastructure Investment	Creation of job opportunities for local people	INF (all areas)	Medium	R54.0
25	Greenview - Clewer line upgrade	Greenview – Clewer power and signaling upgrade all the way to Komatipoort to provide increased operational capacity.						R368.0
26	Pyramid South – Wildebeesthoek doubling of line	Pyramid South – Wildebeesthoek double existing single track section, signal with CTC and electrify line to 25kv AC						R211.50
27	Leeuhof - Falcon Ridge line upgrade	Upgrade with 3kv DC and CTC signaling in order to provide a freight by-pass for the heavily utilized section where nrastructure is shared with PRASA	Transnet	Public Infrastructure Investment	Creation of job opportunities for local people	INF (all areas)	Medium	R68.0
28	Houtheuwel - Falcon Ridge new double line	Provide new double track system with 3kv DC and CTC signaling in order to provide a freight by-pass for the heavily utilized	Transnet	Public Infrastructure Investment	Creation of job opportunities for local people	INF (all areas)	Long	R360.0

PROJECT NO.	PROJECT	PURPOSE	PROPOSED IMPLEMENTATION AGENT	LEGDP PILLAR ASSOCIATED WITH PROJECT	IMPACT OF PROJECT PER PILLAR	CLUSTER (GEOGRAPHIC)	TIMELINE	PROJECT COST (R) Million
		section where infrastructure is shared with PRASA.						
29	Falcon Ridge – kansdam new double line	Provide new double track system with 3kv DC and CTC signaling in order to provide a freight by-pass for the heavily utilized section where infrastructure is shared with PRASA.					Long	R360.0
30	Vaalwater – Matlabas new freight line	Provide new 25kv single line for freight to provide shorter routing to the coast.					Long	R720.0
31	Walvis Bay - Lephale - Mahalapye new freight line (Mamabula Line)	new 25kv freight line to provide shorter routing to coast					Long	R1, 170.0
32	Donkerhoek - Pienaarsrivier new chord	freight ring to Maputo Corridor- provide new single track chord from south to east to facilitate the routing of freight traffic travelling north from Sentrtrand onto the Maputo corridor.					Medium	R200.0
33	Planning Investigation/feasibility study of a rail link between Makhado-Thoyandou and link between Makhado and Lephale	Feasibility of introducing new rail links (what are we basing this one on?) between Makhado and Thoyandou and Makhado and Lephale					Long	R2.0
34	Johannesburg – Polokwane: High Speed Line	High Line. The project would provide a high speed passenger and freight service between Johannesburg and Polokwane with services to major nodes along the route. A service for time sensitive freight would also be provided					Long	About R39 billion
35	Dilokong Corridor- Extension of Moloto Rail corridor into Limpopo, along Sekhukhune corridor linking with Burgersfort	Rail freight project. connect GP – Burgersfort - Polokwane	PRASA / Transnet	Public Infrastructure Investment	Can create job opportunities for local people	INF (S)	Medium	R255.0
<b>ROAD INFRASTRUCTURE PROJECTS</b>								
36	Upgrade the R37 linking Burgersfort via Lydenburg to N4 corridor and Maputo Harbour		RAL	Public Infrastructure Investment	Can create job opportunities for local people	INF (S)	Medium	R829.0
37	Upgrade D113: Link between Sun City to Derspoort via Limpopo		RAL	Public Infrastructure Investment	Can create job opportunities for local people	INF (W)	Medium	R291.0
38	Upgrade D844 road especially near Solomondale	Enhance accessibility to the mineral deposit area around Solomondale.	RAL	Public Infrastructure Investment	Can create job opportunities for local people	INF	Medium	R60.0
39	Upgrade provincial coal haulage roads (paved network)	Implementation of the needs identified by the PMS, as well as the backlog needs on SANRAL and RAL roads in the coal haulage area	SANRAL / RAL	Public Infrastructure Investment	Can create job opportunities for local people	INF (W, S, V)	Medium	R277.0
40	Upgrade of the road network serving the Waterberg biosphere (R510,R516)		RAL	Public Infrastructure Investment	Can create job opportunities for local people	INR (W)	Medium	R697.0
41	Construction of Truck Stops with secured parking, ablution facilities, convenience store, diesel fuel pump, maintenance garage, Banking ATM's, bed & breakfast restaurants, pay phones, health and wellness centre (optional) particularly along R71, R81	To enable Road haulers to rest, get something to eat, refuel, and spend a night to avoid night travel and theft of cargo. Along all strategic routes	RAL	Public Infrastructure Investment	Generate jobs for local people	INF, SER (all areas)	Medium	R7.4
<b>INSTITUTIONAL PROJECTS</b>								

PROJECT NO.	PROJECT	PURPOSE	PROPOSED IMPLEMENTATION AGENT	LEGDP PILLAR ASSOCIATED WITH PROJECT	IMPACT OF PROJECT PER PILLAR	CLUSTER (GEOGRAPHIC)	TIMELINE	PROJECT COST (R) Million
42	Establishment of Freight Logistic Forums in the province (National → Provincial; Provincial → Local / District)	Help promote integrated planning across level of government and other stakeholders in order to implement projects of mutual interest	LDRT	Building the Capacity of the State to Deliver	Promote freight industry in the province	PI (All areas)	Short	5.0
43	Freight Institutional Reform and Capacitation of the Freight Transport within the province (Provincial / District / Local)	Increase efficiency of the freight industry	LDRT	Building the Capacity of the State to Deliver	Promote freight industry in the province	PI (All areas)	Short	10.0
<b>LEGISLATIVE POLICY PROJECTS</b>								
44	A policy study with regard to the development, implementation and maintenance of a comprehensive provincial land transport information (data) system to address freight data challenges within the Province (incl. force-filing)	To solve the law enforcement problem experienced in the Province	NDoT	Building the Capacity of the State to Deliver	Assist in planning and thus promote freight industry in the province	PI	Short	3.0
45	A policy study with regard to the optimisation of road transport law enforcement within the province as well as formulation of very specific law enforcement guidelines, programmes, implementation and monitoring strategies	To improve the quality of freight transport data in the Province (swapped?)	NDoT	Building the Capacity of the State to Deliver	Assist law enforcers to execute their duties better and thus promote freight industry in the province	PI	Short	3.0
46	A study to develop policies and guidelines regarding co-operation between the province, the Cross-Border Road Agency, Customs & Excise and private sector with regard sharing of weighbridge facilities and other equipment at the border posts.	To improve efficiency and coordination among departments at the Border Posts, regarding the movement of freight traffic.	NDoT	Building the Capacity of the State to Deliver	Assist border post personnel to execute their duties based on available policies and guidelines	PI	Short	3.0

## 6. Funding for Freight Transport Planning in Limpopo

### 6.1 Introduction

This section presents a description of how each of the mentioned funding option could assist in development of freight transport planning in the province.

There has been significant growth of road freight volumes over the years in Limpopo. The major concern linked to this increase in freight vehicle traffic is the damage heavy vehicles are inflicting on the road infrastructure.

### 6.2 Alternative Funding Options

It has been indicated in a number of transportation conferences and forums, that Government (both National and Provincial) have funding challenges to maintain and construct new transportation infrastructure. Various funding options have been considered as a solution for this challenge and they include the use of:

- Public Private Partnerships (PPPs);
- tolling;
- road maintenance levy (RML);
- transit fees;
- vehicle registration - and permit fees;
- abnormal load fees; and
- overloading fees.

Another option could be to arrange for a treasury procedure to appropriate or channel funding through government structures for freight transport infrastructure and planning. The same financing options could be adopted by Limpopo Province for purposes of funding for freight transport infrastructure and planning. This will mean that funding primarily for freight projects are “ring-fenced” and cannot be utilised for anything else. The alternative funding options are described in below.

- **Road Maintenance Levy (RML):** RML is a levy levied on petroleum products, namely petrol and diesel. It is a component on the price of diesel and petrol per litre. This fee could assist in the maintenance of roads. Currently this fee is collected and deposited into the National Fiscus;
- **Transit fees:** Are fees levied on foreign heavy vehicles from neighbouring countries entering the country. This funding option could work very well for Limpopo Province taking advantage of its position with the neighbouring countries. It serves as transit route for freight traffic to Zimbabwe, Botswana, Zambia, Malawi and DRC. The transit funds could ideally be collected at the ports of entry and the funds could be used to finance freight transportation facilities and planning in the province;
- **Vehicle Registration and Permit fees (Trucks):** These fees are paid by truck owners for registration of their vehicles as well as for obtaining commercial permits or permits for transporting hazmat commodities. The vehicle registration and permit fees collected within the province can be ploughed back and be utilized for the development of freight transport planning in the province;
- **Abnormal Load Fees:** These fees are charged when a load that cannot be broken down into smaller sections is either too large or too heavy to carry legally on a normal combination of motor vehicles. In this case an application is made for a permit to operate a vehicle on the public road, contrary to the relevant provision of the Road Traffic Act. Abnormal load permit fees incurred in the province could also be used for the development of the freight transport planning;

- **Road Tolls:** These are fees paid by road users for the use of the road. They depend on the vehicle class as well as distance being travelled. Road tolls are already implemented in the province particularly along the N1 and are collected by SANRAL. Other provincial roads can be tolled. The province could benefit from road tolls if only heavy vehicles could be tolled at border posts (ports of entry) for instance;
- **PPPs:** This model involves the partnership of government with the private sector in order to fund infrastructure projects. They are characterised by long term concession contracts, typically 20-30 years, ensure that the state assets are used efficiently after which they revert to the state after the concession expires. In the case of Limpopo province, this funding option is best suitable for financing overloading facilities which are currently not operating effectively or the four which have been closed. The concessionaire could build and operate, and maintain the facility, as well as collect the overloading fines on behalf of government. The PPP model could also be utilised to procure portable weighing scales as well as man the escape routes for purposes of curbing overloading and preserving the road infrastructure; and
- **Road traffic fines associated with freight transport:** These fees are obtained due to freight transport related offences held in the province. Fines regarding freight vehicles could be collected and ploughed back in the province and be utilized for the improvement of freight transport.

### 6.3 Conclusion

There are a couple of alternative funding options available to assist the Limpopo provincial government in maintaining their infrastructure and optimising their services with specific regard to freight transport. It is recommended that the feasibility of these alternative funding options be investigated in detail as part of additional studies on optimising freight transport in the province.

## 7. Monitoring

This section presents the proposed indicators for monitoring the implementation of the Limpopo Freight Strategy.

The success of any strategy is dependent on the monitoring framework put in place to assess if the desired vision and objectives are achieved. The evaluation and monitoring of the provincial freight strategy will be an on-going process. It will start as soon as the Freight Strategy is adopted. Indicators can be utilized to monitor the progress as well as the implementation of the freight strategy.

The indicators utilized for the monitoring and evaluation of the Provincial Freight Strategy should meet a certain criteria. This includes:

- Indicators should be clearly specified and measurable regularly;
- They should be relevant to the characteristic being examined;
- Indicators should be obtained from a credible and reputable data source;
- They should possess an established measurement baseline one that can be developed; and
- Indicators should have the ability of being comparable with other provinces or at national level.

Table 7-1 presents the proposed monitoring framework for the Limpopo Freight Strategy. The framework includes indicators (with descriptions), objectives of the indicators and targets that should be aimed for.

Table 7-1: Monitoring Framework for Limpopo Freight Strategy

INDICATOR	DESCRIPTION	OBJECTIVE	TARGETS
<b>Operational Provincial Freight Forum.</b>	Establishment of the Provincial Freight Forum to champion the freight strategy including a detailed communication plan.	Improve awareness of freight in the Province as well as its importance thereof;  Improve the quality of information available for decision making.	Provincial Freight Forum.
<b>Provincial Freight Data collection Programme.</b>	Establishment of a freight collection programme, with regular counts at key locations to assist in decision making.	Improve and keep provincial freight data up to date.	Defined Freight Data Collection Programme.
<b>Completion of construction projects on the Strategic Freight Network.</b>	Progress of construction projects on the Strategic Freight Network.	Evaluate progress in construction and ensuring smooth flow of freight traffic within the province.	Construct to planned schedule.
<b>Number of Provincial reported fatal and serious injury crashes and injuries (involving trucks per 1000 population/million kilometres of truck travel/ million gross tonne-kilometres).</b>	Exposure and population related indicators of truck accident involvement as a proxy for safety performance.	Asses how transport safety is performing in terms of freight transport related deaths, injuries, accidents and the social cost of accidents.	Provincial Road Safety Plan with links to the Road accident Fund, Road Traffic Management Corporation.
<b>Monthly number of overloading offences on the Strategic</b>	This will measure overload control effectiveness.	Assess if the strategic freight network and escape routes are	Up to date Weighing statistics for all operational Traffic

INDICATOR	DESCRIPTION	OBJECTIVE	TARGETS
<b>Freight Network as well as the escape routes</b>		manned for overloading purposes	control centres as well as escape routes
<b>The average time spent at border posts (ports of entry).</b>	The average time spent by road hauliers at the ports of entry processing paperwork.	Assess whether efficiency has been improved at the border posts.	Up to date register showing number of heavy vehicles attended to at the border per day.
<b>Extension of incident management systems (IMS) on the freight corridors.</b>	Establishing an IMS for all the major freight routes.	To respond to incidents on the provincial road network. This will serve freight vehicles in accidents as well as hazmat spillages.	Established IMS on more provincial freight road corridors.
<b>Full Yearly Monitoring Report to indicate progress and proposed amendments.</b>	Freight Strategy Monitoring report.	Assess on the overall progress of the provincial strategy.	Yearly produced Freight strategy Monitoring Reports as well as proposed amendments to the monitoring framework and/ or the strategy itself.

FINAL DRAFT

## 8. References

1. Agrostats. 2009. World Sorghum. Available at <http://www.agrostats.com/world-statistic/world-cotton.html> . Last visited on 26/10/10 at 11H50.
2. Bekker, T and Lee, P. 2010. World Macadamia Production Projections. Available at: [samac.org.za/www84.jnb2.host-h.net/docs/EstimatedWorldMacadamiaProduction.doc](http://samac.org.za/www84.jnb2.host-h.net/docs/EstimatedWorldMacadamiaProduction.doc)
3. Cotton South Africa. 2009. 2nd Cotton Crop Report for the 2008/09 Production Year – 27 Feb. 2009.
4. Cotton South Africa. 2010. Cotton Market Report as at 4 October 2010.
5. Cotton South Africa. 2008. 4th Cotton Crop Report for 2007/08 Production Year – 25 April 2008.
6. Department of Agriculture, Forestry and Fisheries, 2012. Determination of Forestry Transport Infrastructure Requirements in relation to the Transport Development Plans at National, Provincial and Municipal Level, July 2012.
7. Limpopo Department of Agriculture. 2006. Projections of Various Levels of Agricultural Activity for the next 5, 10 and 15 years.
8. NDA. 2006. Cotton Industry Profile, South Africa.
9. NDA. 2009. Statistics on Fresh Produce Markets 2008, Report 46. Directorate of Agricultural Statistics.
10. Stats SA. 2002. Report on the Survey of Large and Small Scale Agriculture, Pretoria, South Africa.
11. Stats SA, 2002a. Census of Agriculture Provincial Statistics 2002- Limpopo Financial and Production Statistics, Pretoria, South Africa.
12. Soy Stats. 2008. World Soybean Production, 2007. Available at [http://www.soystats.com/2008/page\\_30.htm](http://www.soystats.com/2008/page_30.htm) . Last visited on 26/10/10 at 15H20.
13. Trade Invest South Africa. 2007. In a nutshell: macadamias in SA. Available at <http://www.tradeinvestsa.co.za/news/981834.htm>. Last visited on 20/10/2010 at 12H00.
14. USDA Foreign Agricultural Service. 2004. South Africa Tree Nuts Annual 2004, Global Agriculture Information Network (GAIN) Report. Report No. SF4002. Prepared and Approved by: Patricia Mabiletsa and Scott Reynolds.