

# THE IMPACT OF THE S'HAMBA SONKE ROAD MAINTENANCE PROGRAMME

Authors Name

L M Futshane: Department of Transport, South Africa

Authors Name

M Uken: Royal HaskoningDHV, South Africa

Authors Name

G Treurnich: Royal HaskoningDHV, South Africa

**Abstract**— The S'Hamba Sonke road maintenance programme (SSP) is a substantial investment by the South African Department of Transport (DoT) to develop and maintain the country's provincial road network, while placing the rural economy on a labour absorptive growth path.

The Programme was launched in 2011 and is funded by the Provincial Road Maintenance Grant, which is transferred to provinces on compliance with the conditions set by the Department for this supplementary grant. The purpose of the conditions is to create a more uniform approach to road maintenance in the provinces and to ensure compliance with the 5 key pillars of the programme, namely:-

## 1. INTRODUCTION

The S'Hamba Sonke (moving together) Programme was launched by the South Africa Department of Transport in April 2011 as one of their flagship programmes. It is a response to the growing decline in the condition of the provincial road networks in the country and to place the rural economy on a labour absorptive path, in support of Government's pro-poor programmes.

The Programme also seeks to address several related issues through road maintenance activities and strengthen grass roots involvement in the transformation and growth of the industry, thereby rectifying past apartheid imbalances. It provides a platform for a common, more integrated approach to road network management in the nine provinces, who in the past have run their networks largely independently from each other.

## 2. PROGRAMME OVERVIEW

The Programme is based on five key pillars, which are the guiding principles for implementation and each have their own outcomes:

- **Increase investment** by providing ring-fenced funding for specific road maintenance activities and thereby injecting money into the mainly rural communities that reside along the routes.
- Make use of **labour absorptive** road construction and maintenance activities to create jobs, build capacity in the emerging contractor industry and provide opportunities for local suppliers.
- **Know your network** by introducing best practice road asset management processes and adopting a more data driven approach to road maintenance priorities and activities.



The paper covers the progress made by the programme to date and how it has evolved since its inception. It gives examples of good practice and elaborates on the outcomes. It concludes with some lessons learnt and makes suggestions on how the programme could be improved in future.

- **Improve access** to schools, clinics and other community facilities that are not properly served by the current road network.
- Deliver a **safe road environment** to help reverse the road carnage that is claiming the lives of many road users each year.



### 2.1 Programme Structure

The Treasury and the Department of Transport are the custodians of the Programme and are tasked with setting the direction, policy, disbursing funds and monitoring the progress of the provincial road authorities, who in turn are the implementing agencies. They are responsible for doing assessments, prioritizing needs, packaging projects, implementing them and reporting back to the DoT on progress.

### 2.2 Provincial Road Network

**Table 1**

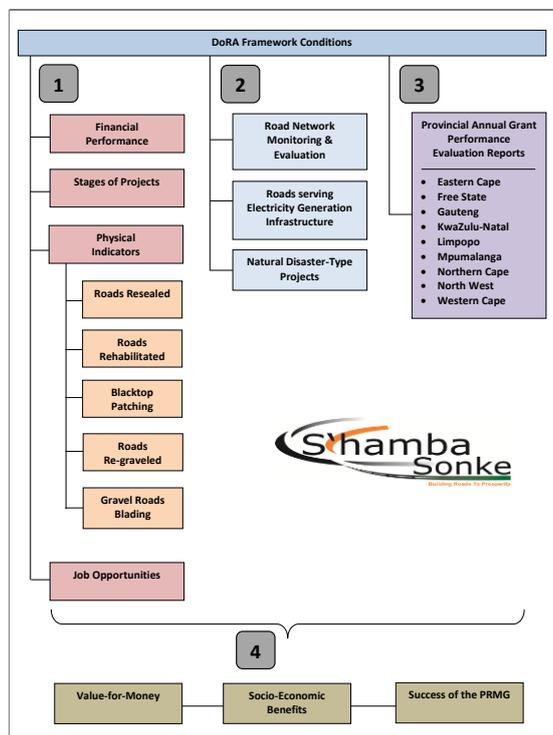
Province	Total Network Extent (carriageway km)	Paved Extent (carriageway km)	Unpaved Extent (carriageway km)
Eastern Cape	35 410	3 808	30 506
Free State	28 493	6 370	22 123
Gauteng	5 641	4 284	1 357
KwaZulu-Natal	30 894	8 084	22 827
Limpopo	21 915	7 583	14 332
Mpumalanga	13 875	5 453	8 422
Northern Cape	19 639	4 987	14 651
North West	27 708	3 745	23 963
Western Cape	16 982	6 616	10 366
<b>TOTALS</b>	<b>200 557</b>	<b>50 930</b>	<b>148 547</b>

### 2.3 Legal Framework and Funding

The Treasury Department has set up a grant allocation for the purposes of the S’Hamba Sonke Programme, called the Provincial Road Maintenance Grant (PRMG). The PRMG is a conditional grant

which ringfences the activities funded by the Grant and so provides guidance to the provinces. This is done through publishing annual grant conditions in the Division of Revenue Act (DoRA). The conditions are reviewed annually and agreed to between the Department and Treasury. This allows for adjustments and ramping up the programme, where necessary. It also forms the basis for reporting back to the Treasury Department. Figure 1 below represents the Framework Conditions.

**Figure 1**



The South African Government makes use of a Medium - Term Expenditure Framework, with rolling three year budgets. This provides certainty to the SSP and allows forward planning.

The annual PRMG budget is divided between provinces by means of a formula that takes into consideration the length of their provincial road network, the traffic volumes, condition indices and the prevailing geo-climatic conditions, as wetter conditions generally have maintenance implications.

The Grant allows for certain ad hoc allocations to provinces who have declared disaster areas because of damage due to heavy rainfall, or where specific focused maintenance is needed for roads supporting electricity generation infrastructure. These allocations are further ringfenced and reported on accordingly.

Key DoRA requirements are that provinces must conduct road condition assessments on their road network in prescribed cycles, for both paved and unpaved roads, for bridges, and do Safety Audits. The

assessments are to be done according to prescribed industry norms and standards. The assessments are to inform Road Asset Management Plans (RAMP's), which need to be submitted annually to the Department and also form the basis for the basket of projects for the following year. To provide transparency and certainty, the project lists are gazetted annually and compliance needs to be demonstrated and reported to the DoT. This prevents the random re-allocation of funding by provinces.

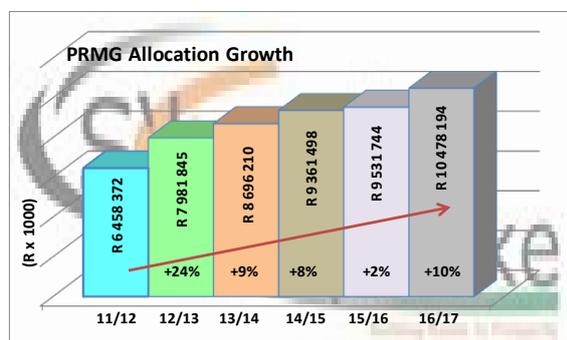
At the end of each financial year the DoT is required to submit to Treasury a consolidated Grant report for the previous financial year.

#### 2.4. Funding Allocations

The PRMG funding is a substantial injection of finance into road maintenance. It is intended as a supplementary grant to be co-funded by the provinces from their pool of funding dispersed as equitable share allocations, which are not conditional.

The following Figure 2 gives a breakdown of the Grant funding for the first 6 years of the Programme.

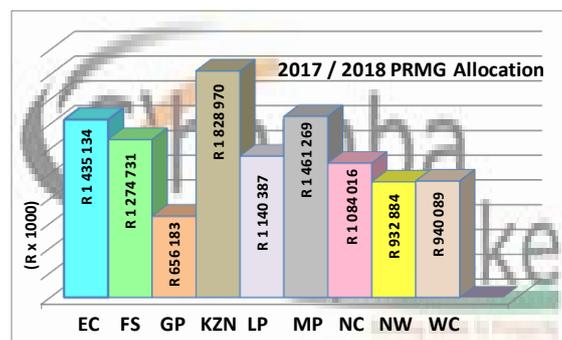
**Figure 2** (South African Rand x 1000)



As can be seen from Figure 2, there has been a steady growth in SSP funding, which in most years has exceeded inflation and affirms commitment to the Programme.

Figure 3 gives a breakdown of the allocations to the provinces for the 2017/18 financial year.

**Figure 3** (South African Rand x 1000)



To incentivize the provinces, it was decided by the DoT and Treasury that from 2018/19, 10% of the grant will be held back and re-allocated according to the previous year's performance. This is a move away from the strict conditional approach.

#### 2.5 Monitoring and Reporting

The DoRA specifies which maintenance metrics are to be reported against. They are to be in the provinces Road Asset Management Plan as well as their Annual Performance Plan (APP), and are: -

- m<sup>2</sup> of surfaced roads rehabilitated
- m<sup>2</sup> of surfaced roads re-surfaced
- m<sup>2</sup> of blacktop patching
- kilometres of roads that are re - graveled
- kilometres of gravel roads bladed
- kilometres of gravel roads that are upgraded (funded from equitable share - not with PRMG funding).

In addition, provinces are required to report against national job creation priorities:

- number of jobs created
- number of full-time equivalents (fte's) created.  
(1 fte is equivalent to 230 person work days)
- number of youth employed (18 – 35)
- number of women employed
- number of people with disabilities employed.

Updated road condition data, which includes, automated road survey data; traffic data; safety audit reports and bridge inspections are to be submitted annually around September, so that this information can be used in their RAMP's.

The PRMG is very specific about what needs to be included in the provinces RAMP. They are: -

- The network hierarchy

- A performance management framework
- A gap analysis
- Information and systems in use
- Lifecycle planning
- Current and future demand
- A financial plan
- Monitoring, reviewing and continual improvements.

Monthly reporting by the provinces is done through an infrastructure reporting module (IRM), developed by Treasury. The IRM needs to be populated with the targeted outputs at the beginning of each financial year, against which progress is measured. More detailed reporting is done on a quarterly basis. Funding is dispersed on the timeous submission of these reports.

The DoT holds regular progress meetings with the provinces and carries out ad hoc project reviews to monitor quality and progress, all of which is reported on to Treasury in the annual PRMG evaluation report.

## 2.6 Training

Training is an important part of the Programme, as there is a need to build capacity in the industry and contribute to Government's transformation objectives.

Most road construction and maintenance contracts in South Africa are required to include worker training as part of the work contracts, with numerous accredited industry specific training modules available, to provide workers with recognized training.

The DoT has also facilitated a partnership with the Construction Industry Development Board (CIDB) to participate in their Contractor Development Programme (CDP). The CIDB is the government body mandated to support the construction industry to develop in an organized manner with contractor development as one of their priorities.

The provincial road networks pass through most, if not all, of the country's local municipalities. Many of the smaller municipalities do not have the know how or capacity to manage their local roads network. The Department has therefore undertaken an initiative called Rural Road Asset Management, which is funded through a separate grant to help these municipalities address their deficiencies and align their road asset management with those in the provinces. They are supported to produce their own Roads Asset Management Plans (RAMP's) to align with those of provinces.

## 3. S'HAMBA SONKE PERFORMANCE

The S'Hamba Sonke Programme is a rather large and complex undertaking that has taken some time to fully settle down with the required alignment. The performance of the provinces has been varied. This is attributable to several issues, such as, a lack of internal

capacity, supply chain inefficiencies, political interference, skills shortages, poor commitment to forward planning, and diverting funds to new road projects, which are not to be funded by the Grant.

What the Programme has now largely achieved, is the commitment and alignment of provinces, with a much improved and more integrated approach to road asset management, by using common platforms and procedures.

The intensity in which the Programme pillars are applied are dealt with next.

### 3.1 Increased Investment

The introduction of the PRMG as a supplementary road maintenance grant to provinces, has been a substantial investment of some R 61 billion over the last 7 years and has largely assisted in arresting the decline in the road network, particularly the surfaced road network.

By adopting a more developmental and integrated approach to road maintenance, a large portion of the funding was injected into the needy rural communities, who in turn also benefit from the increased road condition and accessibility.

The funding has furthermore assisted in repairing regions of flood damage and helped rehabilitate roads that have been damaged by bulk coal haulers to power stations.

Some provinces have adopted *lengthman* programmes for the maintenance of their local roads. This provides a supplementary income to tens of thousands of the poorest rural households that are otherwise dependent on subsistence farming.

The following Table 2 summarises the road maintenance outputs of the Programme over 4 years.

**Table 2**

	Road rehabilitation (lane-km)	Overlays / Reseals (lane km)	Blacktop patching (m <sup>2</sup> )	Roads re-graveled (km)	Roads bladed (km)
<b>2013/14</b>	334	2053	1474889	3945	509494
<b>2014/15</b>	1142	2258	1929757	4068	326175
<b>2015/16</b>	1937	2438	1497281	4560	381867
<b>2016/17</b>	1266	3897	1534166	3775	398113

### 3.2 Labour Absorbtive Maintenance

SSP sets targets and requires monthly reporting on job creation and *full-time equivalent* (fte) work opportunities by certain categories of workers. This has been one of the more successful outcomes of the Programme.

Table 3 gives a summary of jobs and fte's developed by the Programme. It also gives a breakdown of youth, women and persons with disabilities utilized across the projects.

**Table 3**

	2013/14	2015/16	2016/17	2017/18 (excl. L.P,MP, EC)
<b>Job opportunities</b>	144458	151673	191638	140079
<b>fte's</b>	43189	45530	55192	30348
<b>Youth (18-35)</b>	54454	26785	35251	39038
<b>Women</b>	116698	51795	58274	97144
<b>Disability</b>	309	116	372	630

\*1 fte ≈ 1 person working for 230 days in the year

The jobs created equate to more than 50% of the Expanded Public Works Programme figures for the country and are a substantial portion of Government's new job creation numbers.

Reporting quality and more appropriate targets have improved over the years and are now achievable and realistic.

### 3.3 Know your network

The mandatory introduction of RAMP's has significantly improved the knowledge of the network, particularly in certain provinces where this capacity was lacking. Virtually all provincial roads have now been classified according to the functional Road Infrastructure Strategic Framework of South Africa (RISFSA) and the requirements of the Road Classification and Access Management guidelines (RCAM).

This provides a common basis across the network country wide, with collaboration at provincial boundaries. The classification also provides for integrating national and local roads into the country's overall road network.

Table 4 is a brief description of the RISFSA classification for roads.

Table 5 is the current breakdown of road classes by province.

Provincial road maintenance is now planned with real data, enabling targets to be set and monitored, while moving away from the ad hoc approach used in certain provinces in the past.

**Table 4**

	<u>CLASS</u>	<u>DESCRIPTION</u>
<b>MOBILITY</b>	1	Primary Distributor
	2	Regional Distributor
	3	District Distributor
<hr/>		
<b>ACCESS</b>	4	District Collector
	5	Access Roads
	6	Non motorised access ways

**Table 5**

Prov.	RISFSA Class (Carriageway kms)					Total (Carriageway kms)	
	1	2	3	4	5	Classified	Not Classified
EC	1	890	3 683	16 501	14 334	35 410	0
FS	<i>Insufficient Data</i>						
GP	461	1 270	2 267	1 326	318	5 641	0
KZN	374	2 628	3 668	9 645	6 927	23 241	7 653
LP	0	442	2 154	19 103	215	21 915	0
MP	475	1 650	1 752	9 584	425	13 885	0
NC	0	2 658	4 501	18 798	1 751	27 708	0
NW	101	895	4 404	14 223	16	19 639	0
WC	233	2 870	4 185	9 217	343	16 847	135

Source: RAMS Data.

The provision of separate budgets for the preparation and training of staff for Rural RAM's in Municipalities, have largely been successful in assisting them to manage their road assets in a more professional manner. In the past, Municipal Infrastructure Grants (MIG) for the Municipalities were not ringfenced to include maintenance budgets, with the result that these grants were mainly used for the construction of new roads, at the expense of road maintenance. The Department is involved in discussions to have some of the MIG funding set aside for road maintenance. This is an important step in their asset management development process.

### 3.4 Improved Access

The SSP team undertook a detailed Access Roads Needs Study in 2016, across all provinces, to identify public facilities that lack proper access, particularly in deep rural areas. The study resulted in an Access Road Development Plan which has identified road links that still need to be constructed. These are mainly local roads which will need attention from Municipalities. The South African road network is the 10<sup>th</sup> largest in the world, so accessibility is generally not a major issue. What is more important is the maintenance of the unsurfaced road network, which is still deteriorating

and accounts for some two thirds of the of the country’s road network.

The poor condition of unsurfaced roads has a profound impact on rural mobility and propagates the rural poverty trap. The mere blading of graveled roads is not sufficient to maintain this asset, which will need attention going forward.

### 3.5 Safe Road Environment

This leg of the of the Programme is increasingly coming under the spotlight, with the introduction of road safety audits. They will compliment road safety outreach initiatives dealt with by other programmes within the Department. The poor quality of road accident records, makes this task onerous and more attention will need to be given to gain reliable record keeping.

The improved maintenance of the road network does in itself have a positive impact on road safety, particularly with the attention being given to pothole patching. This was done through a focused programme driven in the provinces. Pothole patching targets have in general exceeded the pre-set targets.

## 4. ROAD ASSET MANAGEMENT PERFORMANCE

The DoRA conditions are very specific in the data collection cycles by road class.

Table 6 below are the cycles prescribed by the DoRA.

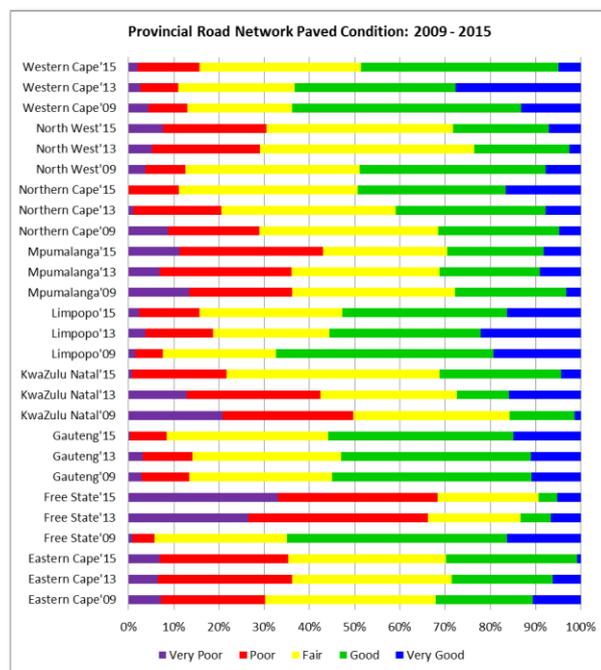
**Table 6**

RISFSA Classes	Asset	Maximum Data Age (Years)	
Classes 1 to 3	Traffic Counts	3	
	Paved Road Visual Condition	2	
	Unpaved Road Visual Condition	2	
	Bridges and Major Culverts Visual Condition	5	
	<b>Instrument Measurement (paved only)</b>		
	• Roughness	2	
	• Rutting	2	
	• Texture	2	
Classes 4 and 5	• Deflection	5	
	Traffic Counts	5	
	Paved Road Visual Condition	3	
	Unpaved Road Visual Condition	3	
	Bridges and Major Culverts Visual Condition	5	
	<b>Instrument Measurement (paved only)</b>		
	• Roughness	4	
	• Rutting	4	
• Texture	4		
• Deflection	Not required		

The data is collected according to prescribed industry standards and provide vital information necessary to prepare the RAMP’s. They also provide the basis for the annual network condition reports. The Programme is moving to automated condition assessments with 10% control audits. Automated crack recognition and improved texture and rutting information will speed up the process as well as data quality and exchange.

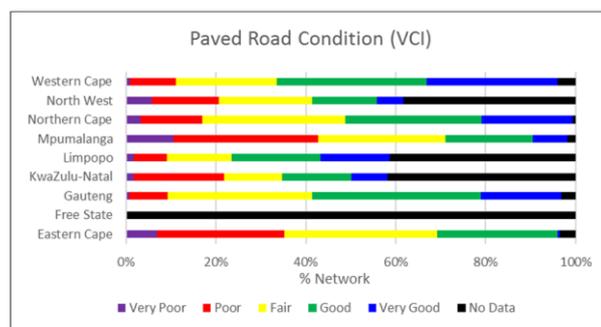
Figure 4 gives a comparison of network condition (paved and unpaved roads) between 2009 and 2015.

**Figure 4**

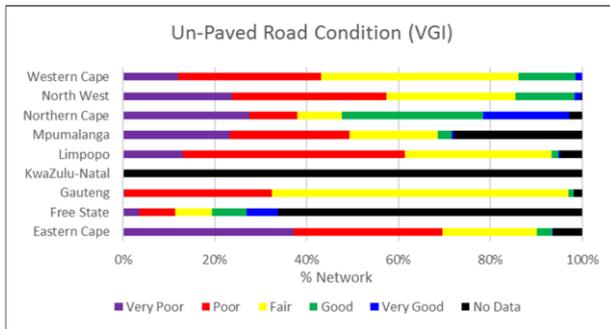


While some provinces have improved their network condition, others have declined. This is largely attributable to these provinces still using PRMG funding for their new road projects as opposed to maintenance activities and not co-funding the Programme. The DoRA conditions have as a result been tightened up to eliminate this diversion of funding. Reporting is now also done separately for paved and unpaved roads, to get a better understanding of the two. The following figures present the conditions reported for 2016/17 for the paved and unpaved road networks by province.

**Figure 5**



**Figure 6**



What is encouraging is the improvement of the paved road network, where a target of less than 10% poor plus very poor is targeted, in line with international standards. The unpaved road network is still showing a decline over the last years, with around 40 percent being in the poor to very poor condition. Provinces generally focus more on their paved roads as they carry the majority of the traffic. This is however to the detriment of rural mobility and accessibility. The programme will need to consider arresting this trend.

Common data collection and reporting platforms, with improved conformance by provinces, will allow the DoT to better understand the impact of the programme on the overall network condition. This in turn should provide direction in amending future grant conditions in DoRA, to get to the required outcomes.

## 5. LESSONS LEARNT AND POSSIBLE PROGRAMME IMPROVEMENTS

The last seven years of the Programme have brought with it numerous challenges that had to be overcome to achieve compliance and alignment of provincial road network maintenance.

The need for also addressing socio-economic issues through the Programme is particularly important in a developing country. It raises the discussions from poor rideability and potholes, to a better understanding how the road network affects the daily lives of the communities it serves.

By injecting a large amount of road maintenance funding into the rural areas, it is important that they also benefit financially from the contracts. Road maintenance, and in particular, routine road maintenance, is by its very nature labour intensive and the substantial number of jobs created (some 800 000 job opportunities over the first seven years of the

Programme), is proof of the job creation potential of such a programme. The added advantage of routine maintenance is that it creates more permanent opportunities than those on rehabilitation contracts, although they should also be considered for more labour enhanced techniques.

By unbundling the maintenance works into smaller contracts, the Programme offers the opportunity to incorporate contractor development and so grow and transform the industry for future need. The latest DoRA conditions require provinces to report on their emerging contractor opportunities as part of their outcomes. It is suggested that they also be required to report on emerging local suppliers in future.

While the Programme has brought about many socio-economic benefits, the biggest impact has been in institutionalising proper road asset management habits across the provinces and indirectly in Municipalities.

The introduction of compulsory road asset management plans and the gazetting of projects, has brought about discipline and improved the forward planning ability of the road authorities. It is now a more data driven approach to maintenance.

The following were areas of substantial improvement:

### Compliance:

The Department of Transport (DoT), as the Transferring Officer, evaluated the performance of the PRMG and submitted all the required statutory reports to National Treasury (NT) within the set timeframes. Statutory compliance was ensured.

### Stakeholders:

During the Programme, strong relationships were built with the major road authorities in South Africa. All 9 Provinces had good interaction with the Roads Co-ordinating Body (RCB), the road Pavement Forum (RPF) and other industry related bodies. Institutional governance was strengthened by the S'hamba Sonke Programme resulting in better co-ordination of road maintenance activities.

### Capacity Building:

During the last 3 years ongoing capacity building and skills transfer took place and Departmental officials were empowered to carry out most reports and presentations themselves. Furthermore they conducted site visits and bilateral meetings with Provinces independently and efficiently producing feedback reports promptly after these engagements.

## ACKNOWLEDGEMENT

The Authors wish to thank and acknowledge the Department of Transport for making available the necessary background and supporting documentation on the S'Hamba Sonke Programme for this paper.

#### REFERENCES

Information for this paper are drawn from several documents prepared by the Department of Transport.

- [1] A pro-poor Strategy Document for Road Infrastructure Development and Maintenance in South Africa
- [2] The Provincial Road Maintenance Grant Evaluation Reports to treasury for the years 2013/14, 2014/15, 2015/16 and 2016/17
- [3] The Gazetted Division of Revenue conditions for the Provincial Road Maintenance Grant (for the relevant years)
- [4] The Road Infrastructure Strategic Framework for South Africa
- [5] Synopsis of Lessons Learnt and Recommendations on the Implementation of the Provincial Road Maintenance Grant ver 1.0