

**ROADS INFRASTRUCTURE POLICY
FOR SOUTH AFRICA:
POLICY FRAMEWORK
(Draft 1)**

12 December 2014

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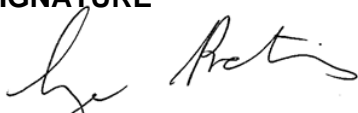
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LIST OF ABBREVIATIONS

DBSA	:	Development Bank of South Africa
DoT	:	Department of Transport
IRPTN	:	Integrated Rapid Transport Networks
NDP	:	National Development Plan
NLTA	:	National Land Transport Act
NMC	:	Network Management Centres
RISFSA	:	Road Infrastructure Strategic Framework for South Africa
RTMC	:	Road Traffic Management Corporation
SANRAL	:	South African National Roads Agency Limited
SSP	:	S'hambe Sonke Program

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- Department of Transport officials

1. INTRODUCTION

1.1 Background

The Department of Transport (DOT) is charged with leading the development of efficient integrated transport systems by creating a framework of sustainable policies and regulations and implementable models to support government strategies for economic, social and international development as encapsulated in the Strategic Plan of the DOT¹. It identified various challenges that the road sector is dealing with which amongst others include the funding backlogs, proper asset management, skills development and coordinated traffic management strategies. It further states that the development of a national roads transport policy should begin to respond to the following issues encountered by the road transport sector:

- Updating the current road policy and legislative framework
- Sustainable funding for road maintenance and upgrading
- New road safety initiatives
- Job creation

The recent development of the National Development Plan⁸ (NDP) in 2013 further identified the creation of workable urban transit solutions, the strengthening and optimisation of freight corridors, the provision of long-distance passenger transport solutions and the rural access and mobility as key policy and planning priorities. Accordingly, the development of a Roads Policy should consider the following:

- Social issues (this relates to the role of roads in providing access to social facilities and amenities)
- Economic issues (this relates to the role of roads in terms of job creation and providing linkages to economic opportunities)
- Environmental issues (this relates to the environmental impacts of roads as well as mitigation measures)

Furthermore, the DOT requires the formulation and implementation of a South African Roads Policy that should address important policy aspects of which the following needs to be considered:

- Policy must be overarching for entire country;
- Planning, implementation and monitoring skills for roads are required in government;
- Road policy must be cognisant of the White Paper on Transport Policy², Moving South Africa Strategy³, Road Needs Study, National Transport Master Plan 2050⁴ (NATMAP), Road Infrastructure Framework for South Africa⁵, Rural Transport Strategy⁶, S'hamba Sonke Programme⁷ and National Development Plan⁸;
- The Roads Infrastructure Policy should focus on the background statement, key challenges, objectives, as well as potential sanctions for non-delivery as well as checks and balances within government;
- The policy must address un-proclaimed roads (approximately 140 000km of roads are un-proclaimed);
- Non-Motorised Transport Infrastructure
- Financial requirements for roads and road safety considerations;
- The policy should also focus on implementation;
- Policy to address accountabilities of respective road authorities; and
- The Policy should include a section that can be considered for incorporation into the NLTA.

1.2 Methodology

The proposed methodology for development of a Roads Policy is illustrated below in Figure 1-1 and illustrates the various processes/ stages that will be followed. The policy development will be undertaken through following; firstly a situational analyses assessment, followed by the policy development stage. The latter will comprise an initial framework (focus of current report), followed by the development of more specific policy statements. Thereafter, once a draft policy has been ratified, a stakeholder consultation process will commence to test the level of acceptance.

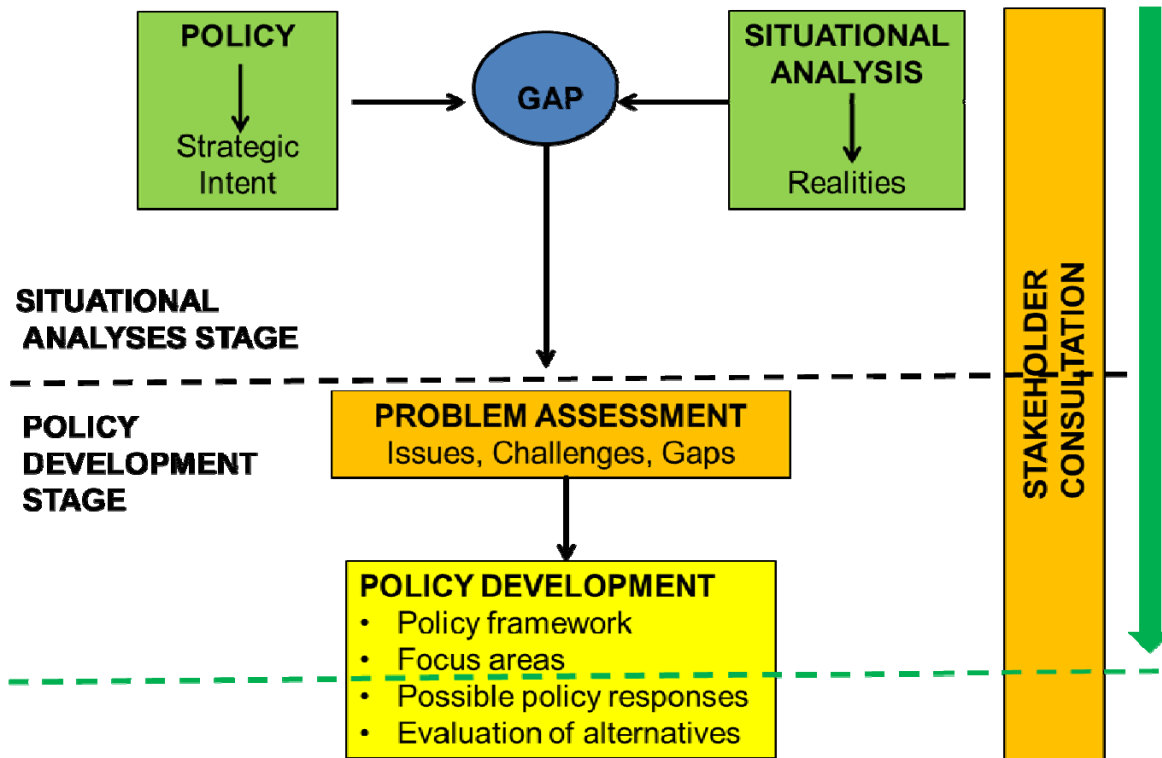


Figure 1-1: Proposed project methodology

1.2.1 Situational Analyses Assessment

The situational analyses assessment stage will in turn comprise of two significant focus areas; namely a review of relevant policies, strategies and planning documentation (i.e. a literature review) and a status quo assessment of the current realities in South Africa.

- In undertaking the literature review there will be a particular emphasis on the legal framework, various policies and strategic plans that sets forth the strategic intent of roads in South Africa.
- The status quo of current realities of the South African (SA) road environment will be undertaken as a desktop planning exercise through researching existing documentation on the various topics identified. The state of investment in South Africa's roads network, as well as the state of the asset itself, the users and the management of the network will also be elaborated on.

Questionnaires were developed as part of the stakeholder consultation process with the aim to illicit responses from various stakeholders and authorities on their experiences with respect to the key issues experienced around the delivery and maintenance of roads infrastructure.

1.2.2 Policy Development Stage

The policy development stage will commence with a gap analyses, comparing the strategic intent and realities on the ground. This will be done through the findings of the situation analyses and issues identified in questionnaires as part of the consultation process.

From this a policy development process will commence. This will comprise an initial framework which is the focus of this current report, followed by the development of more detailed roads infrastructure policies to address the gaps and support achieving the desired vision for the country.

1.2.3 Stakeholder consultation

The primary aim of the stakeholder consultation process will be to present the draft policy to various stakeholders for their information, review and comments. In addition, it will also test the level of acceptance of the policy and the associated risks.

An initial round of consultation took place in the form sending questionnaires to various authorities, as well as having some one-on-one meetings with identified authorities.

1.3 Purpose of the report

The purpose of this report is then to document the initial part of stage 2 of the methodology process; i.e. the Policy Framework stage.

1.4 Layout of the report

The report will comprise the following sections:

- Chapter 1 provides an *Introduction* that sets out the background and purpose of this report
- Chapter 2 compares *Policy Intent vs. SA Realities*
- Chapter 3 sets out the *DoT's Vision and Objectives*
- Chapter 4 describes the *Roads Policy Framework*
- Chapter 5 describes the *Way Forward*

2. POLICY INTENT VS SA REALITIES

2.1 Overview of reality

The development orientation of SA's national policy is to rectify the injustices and imbalances of the past, thereby providing restitution to the millions of South Africans that were marginalised and excluded from economic participation and advancement. There are a myriad of policies in this regard, that each seek to contribute to the objectives spelled out in the Constitution of SA, as well as the goals embodied in the more recent NDP⁸.

The transport sector in particular is one of the areas in which significant change and investment can contribute to correcting this historical imbalance. In responding to meeting the mobility needs of South Africans, as well as effectively connecting people, markets and resources, the transport sector as a whole offers many current and potential benefits to South Africa. The litany of policies in this regard each seeks to fulfil the need to create an effective, affordable and efficient road transport network. However, there still remain challenges in many areas of the road transport sector that are impeding economic development and welfare gains.

The current road transportation environment is comprised of both positive and negative elements. On the positive side, South Africa continues to have a relatively robust, extensive and functional road infrastructure network when compared with neighbouring countries. The road transport network contributes much towards economic and social development goals. On the negative side, there are problems manifesting in certain challenges that emanate from financial, institutional, physical and human frailties. The review of the roads environment in SA indicated the following:

- Although the national road network is in a satisfactory condition, the overall road maintenance backlog, including provinces and municipalities, is increasing.
- Government has limited funds from the national fiscus to meet the road maintenance burden, as well as the increased road network demand due to increased number of vehicles and new, rapidly expanding towns and cities. This is contributing to increased and sometimes severe congestion in South African cities.
- In response to growing congestion and the need for road network improvements, SANRAL has introduced e-tolling to fund network improvements as part of the GFIP. Although tolling of the national roads has become common-place, e-tolling as part of the GFIP has experienced significant civil opposition.
- There is now a growing recognition that roads are no longer reserved for motorised vehicles only, but for all users including public transport and non-motorised transport users. This brings about conflicting mobility and accessibility expectations, especially in urban environments. Walking is a significant commuting mode and cycling has not increased significantly, yet non-motorised transport facilities are limited.
- As part of a strategic vision to promote sustainable forms of transport, government has also embarked on a drive to introduce integrated rapid public transport networks (IRPTNs) in all major towns and cities in SA. The implementation of these IRPTNs is also placing significant demand on the national fiscus.
- It is reported the bulk of all freight is conveyed by road. The prominent use of road infrastructure for freight transport is contributing to poor road safety and compounding the road maintenance backlog. Overloading control is still not sufficient to enforce allowed freight limits and is not able to arrest the negative impact of overloaded vehicles on the road network.

- The poor standard of many provincial and local roads are a concern and the backlog is growing every year. This is further compounded by limited funds as well as a reduced focus on maintenance and limited skills in the public sector. Many municipalities and provinces lack the skill, capacity and funding to efficiently manage local road networks.
- Access to rural areas is limited while rural road infrastructure and corridors are neglected due to limited funds.
- In an environment of limited funds for roads construction and maintenance, the situation is further exacerbated by maladministration and corruption.
- Growth in private vehicles and freight is increasing at a rapid rate and outstripping the supply and availability of roads, leading to growing congestion in major urban areas.
- SA has one of the highest road accident fatality rates in the world. Accidents have a significant impact on individuals as well as the broader economy as a result of time delays, medical and public sector costs due to additional emergency services resources required.

From an institutional road management perspective RIFSA⁵ has made some recommendations to improve the planning and coordination of road management. A road agency model has been proposed and a functional road classification system, with the associated ownership and responsibility in terms thereof, has also been proposed. However, the provinces and local municipalities are grappling with the consequences of the shortage of appropriate skills in this sector. Without significant interventions to improve the skills and capacity within the roads management sector, the human resources required are just not available at all levels of government but particularly at local authority level. The lack of resources, capacity and skills has occurred to the extent that SANRAL has been involved in maintenance of access roads, provincial roads as well as the construction of some non-motorised transport facilities.

Institutional incapacity has the potential of undermining local government and can severely impact the road network at local municipal level. At municipal level, Minister Pravin Gordham is advocating a Back-to-basics approach to support struggling municipalities focusing on putting people first, delivering basic services, good governance, sound financial management and building capacity.

From an economic perspective, the challenges presented above are causing two main problems.

- Firstly, the cost of transportation on the road network is increasing, or currently above, the optimal level. This is due to increased congestion on major routes, the poor road condition and the user-pay principle being applied. These factors contribute to raising the cost of transportation, and can eventually reduce consumer welfare, especially among the poor.
- Secondly, poor linkages between road corridors and poor access to roads in rural communities contribute to limited accessibility and entrenches historical spatial problems. Rural communities have difficulty in accessing services, markets and products located outside their community, while individuals residing in previously-disadvantaged communities need to spend large amounts of resources (time and money) travelling to cities in order to access important services and employment opportunities.

These challenges are reducing the economic development potential of the country and entrenching the developmental challenges of weak economic growth, high unemployment, poverty and growing inequalities across income groups.

2.2 Policy Perspective

In light of the current status quo of roads in SA as presented above, it is important to comprehend what end-destination the policy-makers in SA envisage for the road transportation system. In order to effectively understand what appearance this destination may take, the following 3 documents have been perused; SANRAL Strategic Plan 2012/13-2016/17⁹; Department of Transport Strategic Plan 2012/13-2013/2014¹ and the National Development Plan –Vision 2030⁸. The key strategic areas for each document have been highlighted below:

SANRAL Strategic Plan 2012/13-2016/17 Strategic Objectives:

- Manage the national road network effectively;
- Provide safe roads;
- Carry out Government's targeted programmes;
- Co-operative working relationships with relevant Departments, Provinces, Local Authorities and SADC member countries;
- Achieve and maintain good governance practice;
- Transformation;
- Achieve financial sustainability;
- Pursue research, innovation and best practice; and
- Safeguard SANRAL's reputation: stakeholder communication.

SANRAL's strategic objectives are closely allied to Governments' and the DOT's key outcomes of creating a national transport infrastructure that is efficient, effective, competitive and responsive, and one which meets the needs of society and the economy. In this regard, SANRAL's Strategic Plan for 212/13-2016/17 emphasises the point of effective management of the national road network insofar as growing the network at different priority levels, timely maintenance of roads, increasing the use of information and technology management systems and improving the sustainability and environmental efficacy of the national road network is concerned.

As far as road transportation is concerned, the DOT's strategic goals are seen to be broadly aligned with that of SANRAL.

Department of Transport Strategic Plan 2012/13-2013/2014 Strategic Goals:

- An efficient and Integrated Infrastructure Network that serves as a catalyst for social and economic development;
- A transport sector that is safe and secure;
- Improved rural access, infrastructure and mobility;
- Improved public transport systems;
- Increased contribution to job creation; and
- Increase contribution of transport to environmental protection.

The key focus areas for both the DOT and SANRAL seem to be on:

- Expanding and improving existing road infrastructure
- Improving safety levels on roads
- Improve management and maintenance of road network
- Increase access of rural areas and

- Contribute to environmental sustainability.

These objectives are parallel to the requirements of economic development for SA, which requires that there needs to be a broader, more efficient road transport network that contributes to social mobility and economic growth through effective transportation and strong linkages between regions and other transport modes whilst simultaneously being cognisant of environmental needs and concerns. In terms of what the NDP envisions for the transportation network, these objectives are supportive of one another.

National Development Plan – Vision 2030 Strategic Focus Areas:

- Prioritisation
- Focus on transport as a system
- Look beyond transport
- Behavioural change

The NDP outlines strategic focus areas that should inform current and future transport decisions. These strategic focus areas are especially relevant for the road transport sector as this sector is one of the most important to the country.

- Firstly, the NDP requires that priority should be given to projects that have the greatest benefit at the lowest cost, which are also affordable and safe.
- Secondly, transport should be comprehended as an inter-related network, and policy-makers should adopt a systems-based approach.
- Thirdly, transportation alone will not totally erase the spatial challenges that exist in South Africa. Spatial and geographic factors must be taken into consideration throughout the planning process.
- Lastly, the NDP acknowledges that a change of behaviour is required to improve the social, economic and environmental outcomes of transportation in South Africa. This is to say that the way policy-makers and consumers make transport decisions need to change. This covers a wide range from the choice between different fuels, the choice of subsidies or taxes, etc.

Within the transport sector various strategies and plans have been developed to create an enabling transport environment that would support economic growth. The success of these strategies and plans typically requires a sound roads environment that would enable their successful implementation.

2.3 Gap Analyses

In essence, it is noted that there are a few elements in current policies and strategies that need to be accentuated if the visions in the NDP are going to be realised in the future. These elements constitute the so called “gaps.”

- Local Government Policy Powers: The NDP as well as the DBSA recognise the disjointedness of the relationship between national, provincial and local government authorities regarding road management and policy-making. The DBSA acknowledges that there is weak policy planning and operations between the different levels of government. The NDP therefore calls for transport management powers to be devolved

to local government to reduce the often conflicting policies and mandates that each set of authorities has. In this regard, the ability of local governments to effectively manage and maintain roads can be enhanced which should lead to an improvement in the quality of road infrastructure.

- **Capacity at local levels:** Various sources are reporting the dire skills shortage in SA at local government levels which is contributing to the lack of service delivery. This has significant implications for how the road network is managed, the responsibilities bestowed to local municipalities and provinces and their ability to maintain the required road infrastructure expenditure to maintain the network and to address the backlog.
- **Inter-regional and Inter-modal Linkages:** The DBSA recognises that the linkages in the road network could be improved in two fundamental areas, namely inter-regional (i.e. rural) linkages and inter-modal linkages. Firstly, the planning of rural access roads to ensure adequate linkages with local and provincial roads has been poor. As a result, the low-density, dispersed communities that characterise many rural areas in South Africa are under-served. This reduces these communities' mobility and access to services, markets, resources and employment. Secondly, the linkages of road infrastructure to other transport modes are inefficient. A better integrated 'transport system' will improve the problems of congestion and bottlenecks, and will promote more sustainable modes of transport such as public transport and NMT use which will contribute to financial efficiency and environmental protection in the long-run.
- **Differentiation between High-Growth and Low-Growth Areas:** The National Spatial Development Perspective of 2006 takes a fairly pragmatic approach to economic development, in that productive areas with strong economic growth potential should receive productivity and efficiency enhancing transport (road) infrastructure while areas of low-growth should receive socially uplifting infrastructure (Fourie, 2006; The Presidency, 2006). This would lead to an optimal allocation of resources where the economic growth centres of South Africa would receive the required infrastructure investment and the areas that require social infrastructure investment will receive infrastructure that is suited to the particular needs of previously dis-advantaged and under-served areas. A future road transport policy needs to be cognisant of the duality of South Africa in terms of economic and social needs.
- **Coordination between sectors:** The roads environment is the common infrastructure that is addressed in the various strategies developed; public transport, road safety, overloading, freight, etc. Roads should provide the enabling environment for these strategies to ultimately succeed and integration and coordination is required. Once again, this raises the question of capacity and skills at local and provincial roads departments.
- **Minimum service levels and associated funding:** Various stakeholders consulted have identified funding for roads as a significant contributor to the dire state of roads, especially with the municipal environment. SA in many respects strives to be a developed country, but struggles with the typical challenges of the developing countries. Accordingly, authorities are expected to deliver high quality infrastructure and maintain it, yet funding is limited. The identification of minimum service levels for roads and the associated funding that it would require, would address this uncertainty.

3. DOT'S VISION AND OBJECTIVES

3.1 Vision

South Africa faces many challenges and obstacles as it continues on the path towards inclusive and equitable economic and social development. The concurrent issues of unemployment, poverty, inequality and stagnating economic growth are however making this journey especially difficult, as these problems can exacerbate financial, political, institutional and economic constraints.

In cognisance of both the opportunities and challenges facing South Africa, the NDP - and many other policies and development plans – identifies key areas of attention that require concerted focus from all stakeholders. These issues range from economic policy to public health and education. More specifically, infrastructure has been highlighted as an important target, especially road infrastructure which forms part of the economic backbone of the country.

In response, the DoT has developed a vision statement and amongst others, a specific outcome for the roads environment¹⁰.

Vision

“Transport, the Heartbeat of Economic Growth and Social Development!”

Outcome

“An Efficient, Competitive and Responsive Economic Infrastructure Network”

3.2 Objectives

The objectives of the DoT are informed by its mandate¹⁰:

- policy and strategy formulation in all functional areas;
- substantive regulation in functional areas where DoT has legislative competence;
- implementation in functional areas where DoT has exclusive legislative competence;
- leadership, coordination and liaison in all functional areas;
- capacity building in all functional areas;
- monitoring, evaluation and oversight in all functional areas; and
- stimulate investment and development across all modes.

3.3 Principles

The policy should adhere to the following principles as informed by the DoT's values¹⁰.

- Maintain fairness and equity in all our operations;
- Strive for quality and affordable transport for all;
- Stimulate innovation in the transport sector;
- Ensure transparency, accountability and monitoring of all operations; and
- Ensure sustainability, financial affordability, accessibility as well as the upholding of the Batho Pele principles.

4. ROADS POLICY FRAMEWORK

Economic infrastructure, including SA roads network, has been identified as one of the key levers for economic growth in SA. Although a series of strategies and plans have been developed since the mid-nineties when the future of transport management in SA was encapsulated in the White Paper, the management of the roads environment has not been fully addressed within an overarching national policy for roads infrastructure of SA. Subsequently, a series of initiatives have been developed that has given rise to significant transport investment, which all relies on a sound road network within SA. SA has also spent significant amount of financial resources in addressing the apartheid legacies and the social challenges that SA is facing. Within this context, roads has also been identified as having a significant social role to play.

The process of drafting the policy framework is illustrated in Figure 4-2 overleaf.

4.1 Purpose of policy

In the absence of a roads infrastructure policy, three significant policy documents have begun to provide some strategic direction to roads delivery in SA. Figure 4-1 depicts the roads mandate of the DoT that is mandated by the Constitution of SA¹¹ and the White Paper on National Transport Policy².

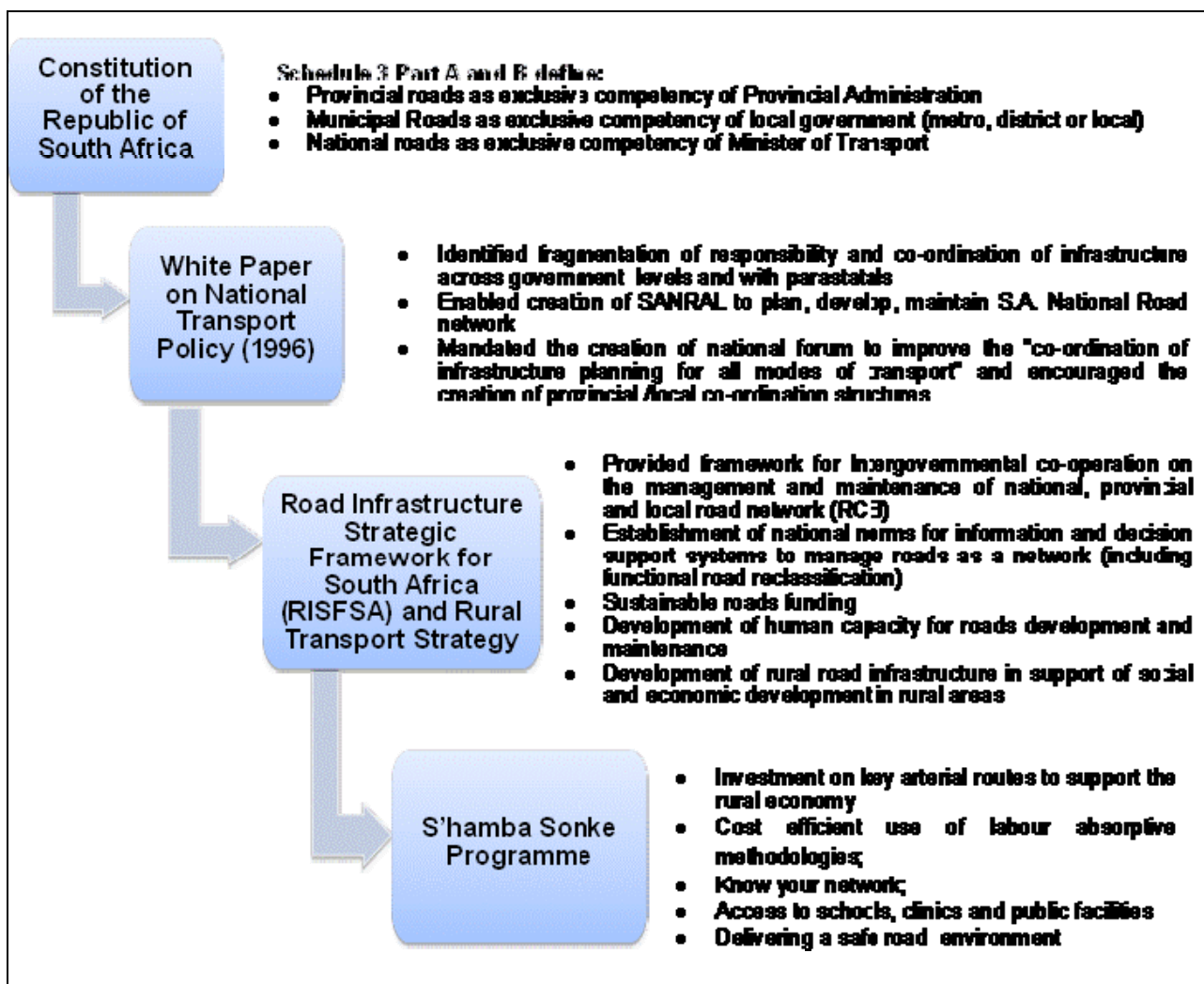


Figure 4-1: Significant policy documentation in roads sector

PROPOSED ROADS POLICY FRAMEWORK

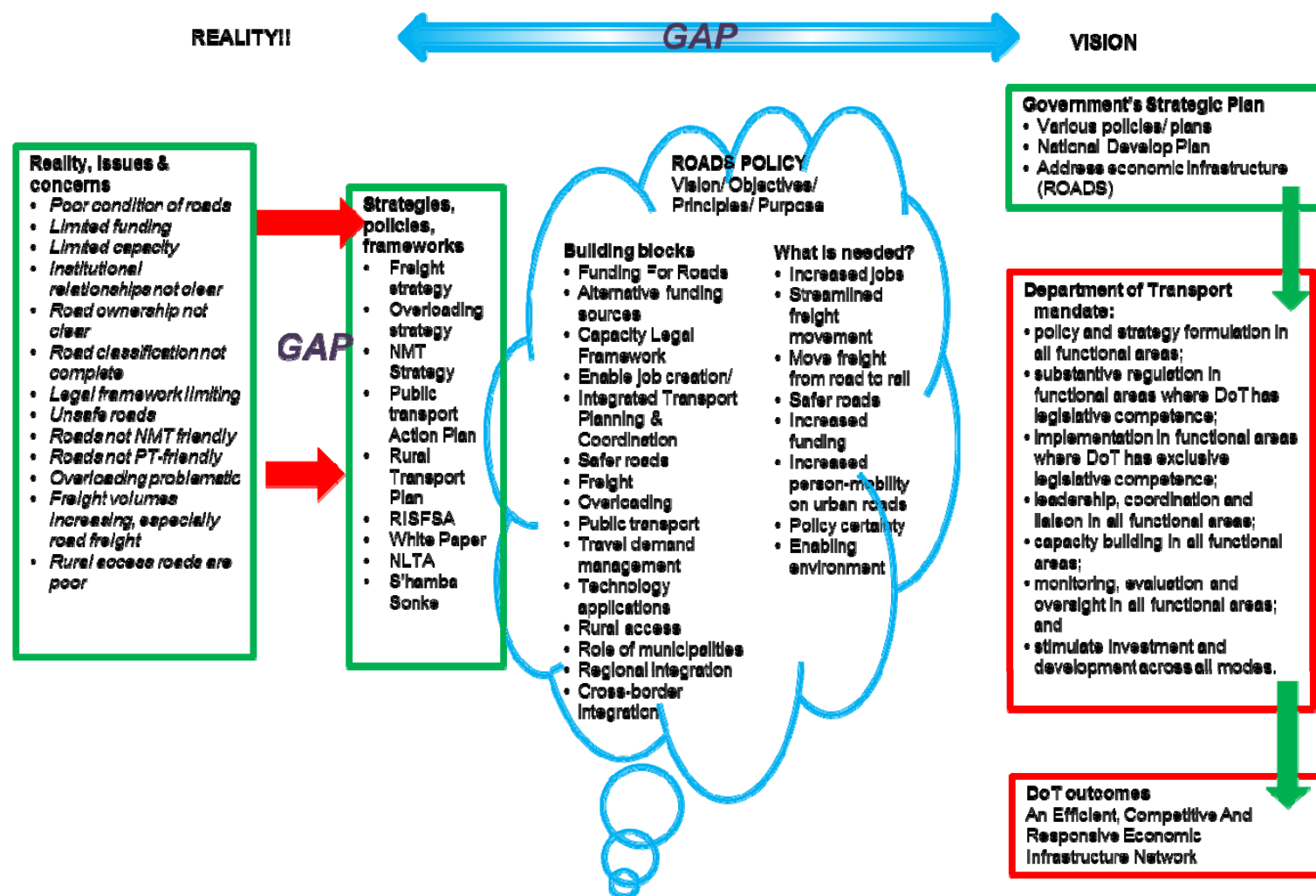


Figure 4-2: Proposed policy framework

The Constitution clearly outlines the responsibility for roads at the various spheres of government. The White Paper outlined “fragmentation” as an issue and identified the “*coordination of infrastructure planning for all modes of transport*” as a means to respond. The Road Infrastructure Strategic Framework for South Africa⁵ then provided the necessary framework for this to occur. Subsequently, in response to the backlog in roads maintenance and the poor state of rural access roads, the S’hamba Sonke Programme⁷ was developed.

Although these policies, as well as the SANRAL Act provide strategic direction for the management of roads within SA, this strategic intent has not been imbedded in a Roads Infrastructure Policy.

Accordingly, the development of an overarching national roads infrastructure policy is long overdue. The purpose of the policy is multi-fold, but primary targets are listed.

- Provide a common purpose with respect to the management of all roads in SA; national, provincial and municipal
- Address the fragmentation of the historical road management approach at the various spheres of government
- Clearly identify the roles and responsibilities of all the responsible role-players
- Align roads delivery with socio-economic priorities of the country
- Provide clear direction towards implementing and maintaining a sound road network
- Align roads management with universal access in view of the growing recognition of public transport users, non-motorised transport users and people with special needs

4.2 Desired outcomes of policy

As an enabler for social and economic development, some specific outcomes are required from the implementation of a roads infrastructure policy. These include the following:

- Increased jobs and skills development
- Development of technical expertise within delivery authorities/ entities
- Streamlined and regulated freight movement
- A move of certain freight from road to rail
- Safer roads
- Increased funding with improved governance
- Clarity of duties and responsibilities across the various spheres of government and agencies
- Increased accessibility in urban areas
- Policy certainty with clear and concise regulatory framework
- Enabling environment that will allow the successful implementation of other transport modes and strategies
- Integration of road transport with other transport modes and other economic activities
- Regional integration within the SADC environment
- Alignment with national developmental priorities

4.3 Building blocks of policy

South Africa faces many challenges and obstacles as it continues on the path towards inclusive and equitable economic and social development. The concurrent issues of unemployment, poverty, inequality and stagnating economic growth are however making this journey especially difficult, as these problems can exacerbate financial, political, institutional and economic constraints.

In cognisance of both the opportunities and challenges facing South Africa, the NDP - and many other policies and development plans – identifies key areas of attention that require concerted focus from all stakeholders. These issues range from economic policy to public health and education. More specifically, infrastructure has been highlighted as an important target, especially road infrastructure which forms part of the economic backbone of the country.

Road infrastructure is an imperative component for economic development, as it is as an enabler of economic growth and supports social objectives in the form of mobility and connectivity. In this regard, policy-makers in South Africa have an array of policies, strategies and plans to effectively and efficiently manage this important state resource. SANRAL and the DOT are thus key custodians and are mandated to ensure the road infrastructure network is utilised in accordance with the overarching goals of the national development project.

There are however certain challenges that exists in the current policy environment. These include issues such as poor government coordination across different administrative levels as well as with the dual nature of the South African economy. These issues require certain considerations if the road network is going to be managed optimally. In support of this, several suggestions have been put forward that deserve reflection and deliberation in drafting a future SA Road Infrastructure Policy.

The following “building blocks” have been identified for the roads policy which is based on the issues and challenges identified in the situational analysis. “Building blocks” are defined as those areas within the roads environment that require attention within the new roads infrastructure policy.

- Grant funding for roads
- Alternative funding sources
- Institutional relationships
- Internal capacity within the roads sector
- Legal framework
- Enable job-creation
- Technical expertise
- Safer roads
- Freight
- Overloading
- Public transport
- Travel demand management
- Rural access
- Role of municipalities
- Regional integration
- Cross-border integration

The primary problems that the roads environment faces, rest within the following functional areas within the roads sector. If these functional areas are addressed for each of the building blocks, it will be able to respond to challenges raised earlier. The following have been identified as key mechanisms that are repeatedly raised within the roads environment:

- Legal framework
- Integrated planning
- Funding
- Skills development
- Institutional relationships

4.3.1 Grant Funding for Roads

Issues

The application of grant funding appears not to adequately address road infrastructure needs for most authorities consulted. Particularly problematic is the available funding for the maintenance of existing road infrastructure with a significant and growing road maintenance backlog throughout the country. Over and above the limited funding, the growing maintenance backlog, maladministration, corruption and inefficient expenditure, add to the challenge.

In addition, the implications of procurement procedures as stipulated in the Municipal Finance Management Act, the Provincial Finance Management Act and the Public Finance Management Act, 1999 on the timeous implementation of roads projects, are also a concern to the public sector, contractors and the consulting engineering industry at large. Currently there are various grants with varying reporting structures and administration involved, while funding sources are not necessarily aligned and do not always allow for integrated transport projects.

Funding cycles are not aligned between all levels of government which also can impede projects across the various spheres. Budgets are not always guaranteed or ring-fenced and are subject to national priorities making it difficult to accurately forecast budgets and thus road infrastructure delivery over a number of years.

Desired outcomes

Funding is a major stumbling block in roads infrastructure and it is important that this policy achieve efficiencies and streamlining in this arena to ensure successful delivery. The following summarise the desired outcomes for grant funding:

- Funding certainty and/or dedicated funding streams that can provide more secure budgetary forecasting
- Roll-over opportunities to secure funds where delays in deliver impacts annual expenditure
- Less “red tape” but balanced with the necessary accountability structures to monitor responsible expenditure.
- Increased funding levels to match the extent and quality of roads network required to support the socio-economic growth envisioned for the country.
- Funding mechanisms that enable integrated transport delivery for example across roads infrastructure and public transport or NMT.
- Alternative funding sources are in place and supported by the appropriate pieces of legislation.
- Adequate funding, particularly for municipal road maintenance.

Mechanisms

Currently in the SA roads context the funding mechanisms for national roads and provincial roads are in place through the SANRAL Act, DORA and the S'hambe Sonke Program. A glaring shortcoming is a road maintenance fund for municipal roads.

Furthermore, minimum service levels will need to be specified for roads together with funding secured, at least to a particular level of certainty. This will have significant implications on budget availability and skills requirement, but it is possibly the only way to turn around the decline of roads.

Road maintenance however must be regulated at all spheres of government as recommended in the Back to Basics Strategy that at least 7% of operational budgets has to be spent on the maintenance of infrastructure.

A dedicated road infrastructure fund is considered to potentially help alleviate the sub-optimal allocation between capital and operational budgets for road infrastructure. Some thought that a funding model for roads administered by the DoT is possibly the most optimal way to deal with road challenges in South Africa. A dedicated road maintenance funding for provinces is already in place in the form of the S'hambe Sonke Program. Ideally such a fund should also be established for municipalities to address the backlog. The Division of Revenue Act (DORA) already provides the financial and legal framework for the allocation of budgets, as well as the necessary financial management framework.

Furthermore, a sound corporate governance environment, populated with experienced and skilled staff at all levels of government, will address the financial leakages.

Currently international examples are still under review and considered for their suitability for South Africa. For example, the World Bank, which recommend the agency route such as SANRAL or Namibia, which uses a dedicated roads fund.

A municipal fund for rural road maintenance in local municipalities could also be considered as a funding mechanism.

4.3.2 Alternative funding sources

Issues

There is a growing demand for roads offset against a limited fiscus which is fighting to adequately fund basic needs such as housing, sewerage and water among other competing infrastructure demands. It has become critical to find some mechanisms to raise additional funding for roads and transport infrastructure.

Although legislation enables certain types of supplemental funding mechanisms such as tolling and fuel levy, there has been major opposition at a public and political level against its use.

In the case of the fuel levy, it is not ring-fenced or dedicated to roads and the concerns have been around how much of the fuel levy actually is spent on roads and transportation. While the long-term sustainability of the current fuel levy is not "future proof" given that there is a move to more fuel-efficient vehicles (hybrids) and the pressing green agenda concerns calling for the reduction in fossil fuel usage due to the negative environmental impacts associated with it.

Another consideration is whether the use of the fuel levy is the most equitable method since lower income groups will also be taxed at the same levels thereby placing a larger burden on the indigent sector of the population.

Desired outcomes

- Identifying sources and alternative sources of funding that will be sufficient for creating infrastructure which will satisfy the continuous increase in demand for movement of people and goods
- Alternative funding that is sustainable, fair, equitable and acceptable to the public.

Mechanisms

As shown in the extract of the minister's speech given in March 2013, government's policy is to move towards a user pay principle as mechanisms to supplement roads funding requirements including the growing backlog in roads maintenance.

Extract from Minister's Speech

"In terms of the overall infrastructure programme, it is important to note that government took a policy decision to proceed with the infrastructure programme, despite the global economic crisis. Without the required infrastructure for roads, airports, electricity, water, etc, it is impossible to provide an environment for investment and economic growth.

The financial reality for South Africa is that there is a growing budget deficit that, if allowed to increase, will be detrimental to the economy and growth prospects of South Africa. In terms of this reality, it is government policy to find additional sources of funding to assist the fiscus to meet the disparate demands made on it so that the social expenditure can be maintained, and implement these infrastructure projects. In order to meet these challenges these infrastructure projects have to be funded through a selective use of a user charge. It is the objective of this government to implement prudent policy that will result in long term benefits to the country.

This policy, as reflected in the White Paper for transport, as well as the National Development Plan makes provision for alternative funding sources from the capital markets and the user pay principle, to implement road development projects. In the context of the overall road network in South Africa that exceeds 700 000 kilometres, a very small portion is tolled. Only 3200 kilometres, approximately 17% of the total national road network of 19 000 kilometres is tolled. The National Treasury therefore still makes available funding for the bulk of roads in South Africa, and tolling is used selectively to provide high standard infrastructure earlier than can be provided through tax based revenues.,,

Ben Martin 6 March 2013.

The following are examples of alternative funding methods that could be explored:

- Fuel tax or fuel levy which is the current method.
- Distance Based (vehicle-km's), which is similar to fuel tax but requires measurement tools.
- Charging for use (toll).
- State, Concessions, PPPs.
- Grant Funding – (Strings/conditions attached).

Legislation is in place which allows for tolling as an alternative funding source and the power to toll national has been conferred on SANRAL by national legislation i.e. SANRAL Act. While in the Western Cape Province, tolling & provincial fuel levy is possible.

The "user pay" principle could be effected through different ways of tolling:

- Distance based.
- User based at a point in time.

There are various types of technology available which can support the type of User-Pay mechanism employed (Open Road, Electronic and boom down). Finding the most suitable technological applications will need to be based on a balance between functionality and cost.

A key obstacle when it comes to implementing these alternative funding mechanisms, is overcoming political and public opposition to their use. It is imperative that all sectors of the country recognise the critical impact not accessing supplemental funding will have on the state of roads and ultimately the economy.

4.3.3 Institutional Relationships

Issues

In the various discussions had with the stakeholders, the issue of institutional relationships has been identified an area that is influencing the road management environment. Although the roles and responsibilities are clearly defined in the Constitution, the management thereof is not always clear.

The NDP as well as the DBSA recognise the disjointedness of the relationship between national, provincial and local government authorities regarding road management and policy-making. The DBSA acknowledges that there is weak policy planning and operations between the different levels of government. The NDP therefore calls for transport management powers to be devolved to local government to reduce the often conflicting policies and mandates that each set of authorities have. In this regard, the ability of local governments to effectively manage and maintain roads can be enhanced which should lead to an improvement in the quality of road infrastructure.

With the introduction of “back to back municipalities in terms of the Municipal Structures Act of 1998 many provincial roads are intersecting with the urban nodes of some towns. The role of district municipalities are also not clear, as these municipalities are responsible for *“municipal roads which form an integral part of the transport system for the areas of the district municipality as a whole”*¹². The management of this section of the provincial road through the area is currently subject to the primary mobility function as part of the provincial road network, as well as the maintenance priorities of the provinces and is not necessarily aligned with the development priorities of the local municipality.

This conflict also arises where national roads cross urban areas and to what extent national priorities override local priorities, is not clear. The current default position is that the higher-level authority, which most likely has more access to funding, dominates. This potential “grey area” is more relevant now with SANRAL having taken over some of the provincial routes in Limpopo and in the Eastern Cape. The query does remain to what extent local issues will be addressed by SANRAL.

The issue of roles and responsibilities is even more unclear when provincial/ national roads cross municipal streets. Who is responsible for the intersection and how is the intersection managed. This is even more exacerbated with the number of dysfunctional municipalities in South Africa.

Desired outcomes

Ideally, the institutional relationships should be clearly defined in the “grey areas” so that each authority is clear about its role and responsibility. This defined role and responsibility should not result in an unfunded mandate for municipalities (especially with respect to unproclaimed roads), but streams should be clearly defined to ensure that the roads backlogs are reduced, the condition

of the network is improved, resulting in a sound road network at municipal, provincial and national level.

The same duties are given to national, provincial and municipal authorities for the roads under their control. The legislation determines the responsibilities for the various roads, but some authorities have not agreed on the limits of their responsibilities and it is therefore not always clear under which of the three types of road authorities a specific road falls. Proclaimed roads are easily identified, but especially lower hierarchy roads are not proclaimed.

Various processes are already ongoing to clearly define the roles and responsibilities, but it might not provide sufficient guidance to the extent required.

- The RISFSA⁵ has commenced a process for the management of road infrastructure. One of the key recommendations was that the functional classification should commence and that roles and responsibilities should be assigned accordingly.
- The Back to Basics approach¹³ advocated to Minister Pravin Gordham clearly spells out the approach of local municipalities. The management of roads should ideally be integrated with this approach to municipal service delivery.
- The Strategic Network Incorporation by SANRAL Report¹⁴ indicated that approximately 18 000km of roads were identified to form the Strategic Network under SANRAL's jurisdiction. The SANRAL Act makes provision for SANRAL to incorporate provincial roads into the national roads network, but only on request from the province.

The proposals encapsulated in these overarching documents should be unpacked in more detail to better define the roles and responsibilities and this should possibly be included in regulations to ensure greater adherence. Funding mechanisms and legal mandates should also be considered in this process.

4.3.4 Internal Capacity Within Roads Sector

Issues

The skills shortage within the roads environment within the public sector is common refrain as is reflected in the RISFSA⁵ investigation, the NDP Diagnostic report¹⁵ of 2011 and South African Institute for Civil Engineers¹⁶ in 2014. This adversely impacts not only front line service delivery, but also long term planning and coordination.

RISFSA⁵ went as far as to state that in some provinces such as Gauteng and the Western Cape, the only barrier towards an effective delivery of the provincial roads network is a chronic shortage of funds. On the other hand, there are other provincial authorities in which conditions, such as bloated, unskilled and inefficient staff structures, and a lack of professional, managerial and technical skills prevail.

In reviewing SANRAL's 2013 Annual Report SABITA reported that due to the fact that the provincial and local road networks continue to deteriorate mainly due to serious capacity constraints at local government levels, it was resolved at the May 2010 Roads Summit to increase the extent of the road network that SANRAL is responsible for. This implies that SANRAL's jurisdiction could extend beyond roads that only serve national interests^{Error! Bookmark not defined.}. However, the policy framework for this function currently does not exist.

Although the DoT has developed a draft Human Resource Development Strategy¹⁷ (HRDS), it is still in its infancy stages. It aims to develop “*Special initiatives to increase the number of civil engineers need to be mounted to build industry capacity in both the short-term and long-term. For instance initiatives that can be implemented include the recruitment of foreign professionals; improving the throughput at tertiary institutions, together with fast-track mentoring towards professional registration in the short-term, and focused capacity development in various areas of the industry in the long term.*”

Desired outcomes

The roads sector should be well capacitated with the right people (qualification, competence, experience) appointed in key positions to undertake the conceptualisation of projects, undertake the design and implementation of projects and undertake the routine maintenance of projects; all activities to be undertaken within a sound environment of technical expertise and corporate governance.

Mechanisms

The draft HRDS recommends specific initiatives to address the skills shortage in the medium to long-term. These include:

- Strategic Support in skills development for road engineering
- Coordination of Education and Training Initiatives
- Information Sharing and Dissemination
- Management and Coordination of Best-practice Documentation, Standards and Specifications
- Coordination of research activities
- Recruitment of skills
- Streamlining throughput of engineers and technicians
- Supporting government skills development programs
- Longer term strategies which include:
 - Strategic partnerships with schools, institutions of higher learning and industry
 - Dedicated training institutions for transport skills
 - Dedication of resources towards the development of specific skills
 - Developing labour intensive construction capacity

However, this plan will not be implemented or be successful without the necessary political will, funding and experienced personnel; political will to drive and spearhead this initiative over a long period of time to ensure sustainability, funding for its implementation and most importantly, the placement of appropriately experienced people in key positions to ensure implementation.

Many of the initiatives require collaboration of other institutions, but dedicated funding from the DoT on key elements of the plan is required.

Key personnel appointments include professionally registered engineers with an appropriate level of experience to lead provincial roads departments and to lead the DoT initiative to manage the deployment of the HRDS. These key positions should provide the advice and guidance in the various regions so that municipalities can also be capacitated. Back to basics¹³ already advises local government to approve their organograms and timeously fill vacancies with competent people.

The current legal framework does not regulate the responsibility of roads management within the public sector. Regulation is not always the most successful tool to ensure compliance, but it will ensure appropriate leadership at national level and within the regions to ensure the successful implementation of the HRDS. Possibly, instead of regulation, experienced and competent leaderships could be stipulated at a policy level.

Apart from the key elements mentioned above, the success of the HRDS also rests with an integrated planning approach across departments and agencies to ensure the most efficient deployment of skills.

Institutional relationships should also be reviewed to ensure assistance and mentorship within regions to help in capacitating developing institutions. However, this requirement should be viewed against the roles and responsibilities enshrined in the Constitution, although the National Land Transport Act' section 12 does make provision for provinces and municipalities to enter into an agreement to jointly exercise their powers and functions with respect to land transport. A potential remedy could include consideration of this clause to extend to roads management.

4.3.5 Legal Framework

The various pieces of legislation that regulate roads and transport have been developed over time. Authorities that were consulted as part of this roads policy development process, expressed the need to change legislation in that it did not support efficient and successful implementation of roads infrastructure. The legal framework guiding roads has been deemed onerous and obstructive. In certain cases because legislation has been drafted at different times some conflicts or contradictions occur.

The legal framework is critical in that it needs to support and enable the realisation of the roads policies developed as part of this process. A separate report on recommended amendments to the legal framework will be prepared to explore this issue in more detail and recommend possible amendments required in greater detail.

4.3.6 Employment Creation and Road Infrastructure

The Problem of Unemployment in South Africa

The issue of unemployment is particularly severe in South Africa with an official national unemployment rate of 25.4% as of quarter 3 2014 (Stats SA, 2014). Such a high rate of joblessness, especially among young South Africans, feeds into other socio-economic challenges such as poverty and inequality. One of the most important factors required for sustained poverty and inequality reduction is decent and sustainable job opportunities. Therefore, the topic of job creation is high on the agenda of the South African Government.

What is needed to Create Employment Opportunities?

In order to stem the unemployment tide, Government has outlined key drivers and projects under the New Growth Path that seeks to create sustainable employment and a more robust economy.

One of the main drivers of job creation within this course of action is investment in infrastructure. Public investment in infrastructure will directly contribute to job creation through construction, operation, maintenance and production and indirectly through improved economic efficiencies.

The Roads Infrastructure Policy should be aware of the employment challenges that plague the country, and look at ways to foster job creation through labour intensive and labour absorbing principles and methods in terms of road infrastructure construction, maintenance and operation. In essence, the Road Infrastructure Policy should direct the role-players within the road transport industry to utilise the relative abundance of labour in South Africa more effectively in terms of construction, operation, maintenance and implementation of road infrastructure.

Employment Creation through Road Infrastructure

The potential contribution of the road transport industry and Road Infrastructure Policy to job creation would be to employ labour-intensive construction methods in the construction/maintenance/operation of roads. This would maximise the job creation contribution of road infrastructure and assist the government in achieving the broad socio-economic objectives for the country. Substituting heavy machinery for labour will draw many of the unemployed individuals into productive unemployment without sacrificing quality or efficiency.

Owing to South Africa's extensive road network including both paved and unpaved roads, the construction, operation and maintenance of roads by labour-intensive methods can deliver employment to many under-developed and under-serviced communities that would not otherwise have had access to these employment opportunities.

Rationale of the Employment Creation

The South African White Paper on Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry of 1999 expresses a clear vision for public-sector service delivery aimed at optimising job creation opportunities through labour-intensive construction. Labour intensive construction can be realised in the delivery of infrastructure through the adoption, where technically and economically feasible¹⁸ as advised by the Construction Industry Development Board (cidb).

- labour-based methods of construction where labour, utilising hand tools and light equipment, is preferred to the use of heavy equipment for specific activities; and
- labour-based technologies where there is a shift in balance between labour and equipment in the way the work is specified and executed for selected works components.

By utilising appropriate specifications of labour-based technologies, additional employment opportunities can be generated per unit of expenditure.

Some of the labour-intensive technologies highlighted for the construction and maintenance of roads include the following:

- Foamed bitumen
- Cast in-situ block paving
- Emulsion Treated Base (ETB)
- Macadam-type pavement layers (waterbound and slurry bound)
- Unsealed roads

The different labour-intensive technologies listed above can be employed according to the requirements and conditions of the particular community/area. Factors such as the level of traffic,

type of vehicle and climatic conditions can be assessed and an appropriate technology can be applied. For instance, the unsealed road construction technology can be utilised for local communities that suffer from severe unemployment and a low skills profile that have low levels of vehicle traffic. The unsealed road construction technology will create sustainable local employment due to the necessity of maintaining the unsealed road surface.

Labour-intensive road construction technology also includes an element of training and skills development where local communities/unemployed individuals are taught specific skills for the construction programme. These skills incorporate the road construction itself as well as other components such as earthworks, drainage, hedging and small plant operations. Once the construction of the road is complete, these trained individuals will have gained some sort of skill that can be applied to other projects or perhaps in other contexts.

Labour-intensive construction methods for roads are also likely to have a measurable impact on the softer elements of the community, including sense of ownership and empowerment. Communities will therefore be more inclined to maintain the road infrastructure on their own accord. The New Community Movement in South Korea during the 1970s is a good example of how small and rural communities can be encouraged to participate in the development process, through infrastructure programmes in these communities and efforts to increase community income.

Synopsis

By following labour-intensive road construction and maintenance principles, the Road Infrastructure Policy can optimise the amount of employment generated per unit of expenditure on construction or maintenance on road infrastructure throughout South Africa, thereby increasing the employment impact of road infrastructure initiatives and duly assisting the government in reducing unemployment and raising living standards.

4.3.7 Freight movement

Background of Freight Movement in South Africa

Road transport is one of the most important modes of transportation in the South African economy, and therefore has a vital role to play in future economic and socio-economic development in the country.

The road network and more specifically road infrastructure throughout the national, provincial and local levels is coming under continued pressure as the size of the vehicle fleet in South Africa expands as well as the amount of people and freight being conveyed on roads increases.

If South Africa is to have a well-functioning road network that is effective and lends itself to economic efficiency and other pivotal socio-economic objectives, certain challenges need to be addressed.

Current Problem Regarding Freight Movement on SA Roads

The most pressing issue facing road transport as a mode is excessive freight volumes currently being transported on South African roads by heavy-haul vehicles (HHV). The 9th Annual State of Logistics Survey Report (2012) indicates that over 88% of freight is moved via road in South Africa compared to 11% for rail.

Intensive use of an ageing and limited road network for rail-friendly commodities is leading to many unwanted consequences on the road network: road damage, poor safety, congestion and higher carbon emissions. The National Freight Logistics Strategy of the Department of Transport¹⁹ notes the following challenges within the road transport industry that are creating these issues:

- Inadequate levels of investment
- Shortened maintenance and rehabilitation cycles
- Circumvention of toll-fees and user-pay fees by HHVs by switching from primary road network to secondary road network
- Congestion and bottlenecks in main urban areas

The costs of the skewed modal use of rail and road in South Africa is becoming clear as the amount of HHVs on the roads continually increases. Road infrastructure, particularly secondary road networks, is coming under increased pressure as the amount of heavy freight vehicles on the road network increases. The life-cycles of many roads have been significantly shortened by HHVs, which have a highly detrimental effect on the pavement layers of the road. Road damages as a result are putting a significant burden on authorities to maintain and service roads as well as other road users who faces higher operating costs as a result of poorly conditioned roads. As freight movements on the road network in South Africa increases, the issues associated with the challenges above can be expected to become more acute and widespread.

Many HHVs on the road network also cause other negative externalities: road safety is negatively affected as large vehicles are a hazard to other vehicles and pedestrians; congestion on major corridors or ports of entry/exit is common; while carbon emissions from trucks exceeds that of freight trains on a ton-kilometre basis. Table 1-1 below gives a comparison of the associated costs between road and rail per ton-km.

Table 4-1: Cost Comparison Road and Rail

(c/ton-km)	SA Road	Rail
Accidents	5.585	0.439
Congestion	2.181	-
Land way	1.138	0.118
Noise	2.135	0.021
Policing	0.293	-
Total	11.332	0.578

Source: SRL Economic Cost-Benefit Analysis Report, 2014.

As indicated in **Table 4-1** above, the externality cost of a ton-km for road transport is R0.11 while it is R0.058 for rail. This means that it is R0.108 cheaper in terms of the externality cost to transport a ton of cargo one kilometre using rail than it is using road transport. There is therefore a drive to move rail-friendly cargo back onto rail.

Solution to Freight Transit Imbalance

In order to stem the pressure of freight conveyance on road infrastructure in South Africa, a modal shift is required to restore balance between transport modes in South Africa. A balanced transport system can contribute to a more effective allocation of scarce resources as well ensure that utilisation of road infrastructure remains sustainable.

Goods such as bulk commodities including coal, chrome and manganese, automotive parts and components, containers and chemicals are deemed to be rail-friendly due to their mass and volume. The distance between the point of origin and point of departure for many of these commodities means that rail transport is more economically viable than road transport.

A modal shift is therefore expected to alleviate problems associated with road freight movements including road safety and road infrastructure damage. In many of South Africa's provinces, the quality of the road network has been regressing over the years due to a persistent funding gap and capacity constraints of road authorities - particularly at the provincial and local level (DBSA, 2012). Further, the road user costs are estimated to be more than twice that of road user costs on roads in good conditions. Thus reducing rail-friendly road-haulage in throughout South Africa will have significant benefits for the economy and communities in these areas.

Modal Shift as part of the Solution

In order to effect a modal shift of freight cargo from road to rail, different initiatives can be created in different areas of the overall transport market. Within the road transport industry, regulatory actions can be taken to reduce the negative impact of HHVs on physical infrastructure. This could encompass, for example, size and mass limits. Further, infrastructure levies can be applied on a user-pay basis that charges HHVs based on their usage of the roads, which is consistent with the user-pay approach advocated in the DoT National Freight Logistics Strategy (2005:38).

A modal shift can also be effected through efforts in other transport industries, such as the rail industry. By making changes in the rail industry, freight can essentially be 'pulled' from the road network to the rail network. And while a road infrastructure policy cannot speak directly to the rail industry, it can make reference to the need to have greater coordination and institutional coherence between the two industries. A common direction should be sought between the Roads Infrastructure Policy and other industry specific transport policies such as the National Rail Transport Policy that is busy being formulated.

Intermodal facilities can also be used to promote a modal shift from road to rail.

Synopsis

By achieving a more balanced modal split between road and rail for the conveyance of freight, it is possible to increase the economic life span of road infrastructure in South Africa and simultaneously reduce serious issues such as energy consumption, carbon emissions, road safety and infrastructure damage.

The following are measures to be considered by the Road Infrastructure Policy in order to mitigate the issues of excessive freight movement on South African roads:

- Regulatory measures within road freight industry to align the prevailing market cost of road freight transport with true cost i.e. taking account of external costs faced by public such as carbon emissions, road infrastructure damage, congestion and safety.
- Institutional cooperation and relationships with other transport sectors, especially rail, to create common direction.

While regulation may be needed to reduce the distortions in the road transport industry due to freight movements on the road, it becomes difficult to constraint the external costs of freight movement on roads without impairing the economy.

4.3.8 Overloading

Issues

The Development Bank of South Africa's report on SA's economic infrastructure^{Error! Bookmark not defined.} stated that one consequence of growing freight volumes on the roads is that the overloading of freight trucks is causing not only rapid deterioration in road conditions, but also diminishes road capacity and safety. In this regard, the following problems have been identified:

- A lack of trained staff;
- Limited hours of operation of weighbridges resulting in early morning and late evening violations;
- Lack of escape roads and alternative routes;
- Poor geographic coverage of weighbridges and permanent overloading of control facilities;
- Poor enforcement and inadequate legal support for the overloading enforcement system;
- Possibility of corruption; and
- The profitability of overloading.

In 2010 the CSIR²⁰ also reported that the number of overloaded vehicles during the period 1995 to 2009 has increased, but that the margin of overloading has decreased with the bulk of overloading in 2009 falling within in the category 0-500kg.

Desired outcomes

The overloading of vehicles has a significant implication on the road condition and the road network overall as identified in Road Freight Strategy for South Africa²¹. Other concerns included excessive freight on the roads, ineffective law enforcement, slow regional integration and a poor road safety record.

Ideally, self-regulation and cooperation/ compliance from the road freight industry would address a significant portion of the overloading problem. This approach has been proposed in the South African Freight Strategy²¹ to promote prevention of road damage and improve road safety. Furthermore, the strategy²¹ proposes that *“To tackle the issue, a multi-disciplinary and concerted effort is proposed, involving strong deterrents against overloading, attractive incentives to comply with the law, and an improved capacity of law enforcement through more funding, use of technology and data intelligence. To ensure that law enforcement works as an integrated system, it is proposed that a single overload control inspectorate is established. Additional funding for law enforcement is provisioned for from the heavy vehicle user costs, as discussed in the earlier sections of the strategy. Proven strategies to deal with habitual over-loaders have been developed based on international best practice.”*

Expansion the overloading control network to ensure that all routes are appropriately monitored and enforced should be investigated. It is anecdotally reported that only 2% of SA road freight is weighed at weighbridges. The outstanding 98% could have significant implications on the state of the network is such information is available. Accordingly, a combination of self-regulation, enforcement and an appropriate network of weighbridges should strive to achieve a balance between self-regulation and enforcement.

Mechanisms

Currently the proposal for self-regulation is contained in the Road Freight Strategy of South Africa. The strategy also advised that adding additional weighbridges to the network is not the solution, but the current non-operational weighbridges should become functional again. The infrastructure and operational requirements for this approach will have significant budget and resource implications for the DoT. In addition, weigh in motion screening should also be used at key locations to minimize delays to freight, especially if self-regulation is promoted, and to extend the network of overloading control without necessarily having to implement weighbridges.

Furthermore, an integrated and coordinated effort with respect to freight management, the freight industry and overloading control and road safety is required to support the freight industry, as well as ensure the long-term preservation of the road network.

4.3.9 Public Transport

Issues

Public transport has been accepted as an environmentally more sustainable and economically more effective mode of transport versus private vehicles. However, road infrastructure currently does not specifically drive the same sustainable philosophy or directly support public transport implementation and operations. In that the extent of the road network is not planned to support accessibility of public transport services and vehicles. While in certain cases the condition of the current road network affect the type of public transport vehicles that would be suited for these roads and may negatively affect the cost of vehicle maintenance. Therefore the quality of public transport is directly impacted by the condition of roads.

Though the reverse is also true, in that the operations of public transport services also increase the frequency and schedule of our already strained roads maintenance programmes and budgets.

The coordination between roads and public transport is limited. Road infrastructure does not make provision for public transport e.g. dedicated public transport lanes or stops. Typically roads need to be retrofitted for public transport services.

Desired outcomes

The following are desired outcomes for roads in relation to public transport needs:

- The sustainable transport philosophies underpinning public transport are mirrored in roads infrastructure in order to encourage effective delivery of public transport.
- Road planning, design and construction support public transport implementation and operations to maximise fiscal efficiencies
- Road infrastructure makes provision for public transport e.g. dedicated public transport lanes or stops.

Mechanisms

It is imperative that roads policies reflect the broader sustainable transport philosophies and priorities.

Public transport needs to be holistically planned and implemented with roads i.e. for both new roads as well as maintenance of existing road infrastructure to ensure that:

- Road network priorities align with human settlement developments plans and the respective public transport services for these communities.

- The quality and condition of the roads support the type of public transport services planned and operated.
- The design of the road infrastructure promotes the transit orientated development environments required for efficient public transport.

Legislation needs to appropriately regulate and enable the integration between roads and public transport planning as well as allow for suitable funding mechanisms for road infrastructure and public transport to be comprehensively and holistically implemented. Funding mechanisms therefore need to be put in place to deliver integrated roads and public transport priorities.

Technical skills and human resources will need to be in place within roads and public transport sectors and at all required levels of government to support this integration and carry through on effective implementation.

Institutional relationships and forums to enable the integration and coordination required.

4.3.10 Travel Demand Management

Issues

Travel demand management is currently being implemented with no coordination with road infrastructure. Road infrastructure constructs roads based on existing and projected travel demand forecasts. TDM is attempting to manage this demand with TDM interventions, but additional demand is being created in response to the construction of new roads. Therefore TDM and road infrastructure can be seen as acting at cross purposes.

Desired outcomes

The following are some of the desired outcomes for roads from a TDM perspective:

- The green transport philosophies underpinning TDM are also similarly reflected in roads infrastructure toward effective delivery of overarching sustainability goals.
- TDM and road infrastructure is planned and implemented as a common strategy with sustainable transport underpinning both sectors.
- The road network design and implementation supports TDM principles and aligns with TDM objectives or interventions.
- The appropriate balance has been achieved between sufficient road space to optimize economic activity and growth while effectively managing the negative impacts of congestion through TDM.

Mechanisms

Through integration and coordination mechanisms:

- road infrastructure makes effective provision for the infrastructure required to support TDM programmes such as dedicated public transport, high occupancy vehicle (HOV) or car-pooling lanes.
- The design of particularly roads in residential and TOD areas support TDM principles toward more sustainable modes of transport such as walking, cycling and public transport.
- Budgets and financing other financing mechanisms align TDM and roads priorities.

Legislation will need to be put in place to regulate the integration between roads and TDM planning and enable suitable funding mechanisms for road infrastructure and TDM to be comprehensively and holistically implemented.

4.3.11 Rural Access

Issues

The Status Quo Analyses has concluded that poor linkages between road corridors and poor access to roads in rural communities contributes to low-mobility and entrenches historical spatial problems. Rural communities have difficulty in accessing services, markets and products located outside their community, while individuals residing in previously-disadvantaged communities need to spend large amounts of resources (time and money) travelling to cities in order to access important services and employment opportunities. These challenges are reducing the economic development potential of the country and entrenching the developmental challenges of weak economic growth, high unemployment, poverty and inequality.

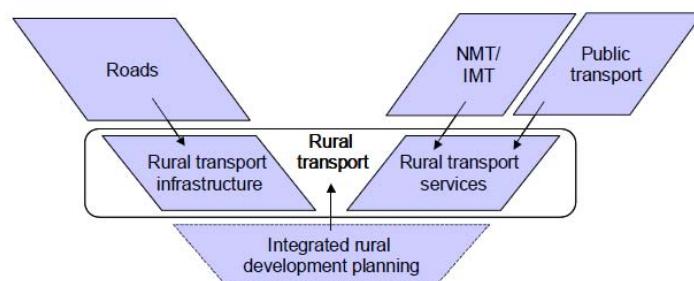
The Department of Transport Strategic Plan²² has identified improvement rural access, infrastructure and mobility as one of its strategic goals.

Furthermore, the DBSA²³ recognises that the linkages in the road network could be improved in two fundamental areas, namely inter-regional (i.e. rural) linkages and inter-modal linkages. The planning of rural access roads to ensure adequate linkages with local and provincial roads has been poor. As a result, the low-density, dispersed communities that characterise many rural areas in South Africa are underserved. This reduces these communities' mobility and access to services, markets, resources and employment.

The National Spatial Development Perspective of 2006 takes a fairly pragmatic approach to economic development, in that productive areas with strong economic growth potential should receive productivity and efficiency enhancing transport (road) infrastructure while areas of low-growth should receive socially uplifting infrastructure (Fourie, 2006; The Presidency, 2006). This would lead to an optimal allocation of resources where the economic growth centres of South Africa would receive the required infrastructure investment and the areas that require social infrastructure investment will receive infrastructure that is suited to the particular needs of previously dis-advantaged and underserved areas. A future road transport policy needs to be cognisant of the duality of South Africa in terms of economic and social needs.

Desired outcomes

The improved development of rural communities with the accompanying employment creation opportunities and sustainable livelihood will greatly reduce the current burden on the fiscus. Many opportunities have been identified in the Rural Transport Strategy²⁴ to address transport needs within rural communities which has been designed around 2 strategies namely the provision of rural transport infrastructure and rural transport services. Integrated rural development planning has been identified as a significant tool to facilitate both strategies.



Mechanisms

The S'Hamba Sonke Program (SSP) was identified as a particular initiative by the DOT to develop and maintain South Africa's provincial (secondary) road networks, as well as improve access to social amenities and at the same time, to place the rural economy on a labour absorptive growth path²⁵. Key pillars for this program include the following:

- Increase investment in maintenance of key arterial routes to support the rural economy
- Increased focus in the cost efficient use of labour absorptive methodologies in road construction and maintenance;
- Know your network: A focused attention on deployment of local resources to support road network asset management
- Improving Access to Schools and Clinics and other public facilities
- Delivering a Safe Road environment

Ideally, the SSP should be integrated with rural development planning at municipal level as well as part of the Integrated Development Planning (IDP) processes at municipal levels. Currently it is a DoT-lead initiative, which is being implemented by the provinces. Furthermore, the SSP should consider the development of permanent employment opportunities, which is more sustainable in the end.

Institutional relationships between national, provincial and municipal spheres of government should be strengthened to allow for collaborative planning and implementation in rural environments.

4.3.12 Role of municipalities

Issues

The latest statistics on road ownership cited by SANRAL at the 2014 SARS conference indicated that of the 750 000km of roads in SA, 256 914km falls under the authority of local municipalities and 66 143km with metropolitan authorities. Accordingly, 43% of roads fall under the jurisdiction of local government.

The NDP Diagnostic report²⁶ of 2011 concluded that 3 major factors drive uneven performance on service delivery; one which was a capacity and skills deficit in the public sector. It stated that the public service faced a severe shortage of staff and specialised skills, especially in health, policing, infrastructure planning, engineering, finance and information technology. This adversely impact not only front line service delivery, but also long term planning and coordination. COGTA has identified that one third of municipalities are getting the basics right, a middle third is functional and one third is frankly dysfunctional. This institutional incapacity, amongst other reasons, has led to the breakdown in service delivery.

It is alarming that 43% of SA's network is managed by two-thirds of municipalities that are have areas of poor performance and/ or are dysfunctional.

Desired outcomes

COGTA's Back to Basics Strategy has been identified as the turnaround strategy for local government. Within the requirement for infrastructure maintenance, the maintenance of roads has been identified as one of the key performance indicators.

As the municipal sphere is responsible for 43% of SA's road, the quality and competence of the engineering staff at local government level is the trigger to address the roads backlog and maintain

the state of roads. Accordingly, the technical capacity with respect to road design, road construction and road maintenance at municipal level must be a priority.

Mechanisms

Institutional relationships should also be reviewed to ensure assistance and mentorship within regions to help in capacitating developing institutions. However, this requirement should be viewed against the roles and responsibilities enshrined in the Constitution, although the National Land Transport Act' section 12 does make provision for provinces and municipalities to enter into an agreement to jointly exercise their powers and functions with respect to land transport. A potential remedy could include consideration of this clause to extend to roads management.

Furthermore, an integrated planning approach should also be considered as part of the back to basics approach.

4.3.13 Road Safety

Issues

SA has a significantly high road safety fatality rate due to crashes when compared with other African countries and internationally. Underpinning the road safety problem is also the quality of road safety data.

The quality of road safety data is poor, as confirmed by a recent study on Road freight Accidents for the NDoT. As the quality of road safety data is poor, it is estimated that crashes per year range between 350 000 and 450 000 per annum. It is further estimated that fatalities range between 15 000 and 20 000 per annum as only fatalities on scene are reported. This figure cannot be confirmed and accordingly the extent of the problem cannot be quantified.

When interrogating the available data it is concluded that of the 8 Metros, only 5 has reasonable data, and 3 of the 5 only for the last 3 to 4 years. Of the 9 provinces, 5 of the 9 has data, of which 3 are reliable.

The conclusion drawn from this is that we do not know the extent of the project.

Desired outcome

Primarily, the desired outcome is a reduction in road safety crashes and an overall improvement of road safety in SA.

Mechanisms:

SA has good road traffic legislation, but the implementation thereof is lacking. A review of the legal framework should identify this problem stems from and make proposals on how to remedy the situation.

Poor driver behaviour and general disobedience to rules reflect a general problem in society. Driver awareness and society awareness is also a particular mechanism.

Surveys by the CSIR showed that 70% of heavy vehicles are not road worthy – similar statistics expected for other vehicles. Accordingly, vehicle roadworthiness is another mechanism that should be considered in the development of the policy.

In workshops held with all the officials of provinces and Metros, corruption was identified as one of the key problems. Corruption occurs in driver testing, vehicle testing, road blocks and speed enforcement. Furthermore, courts are too busy to punish the guilty and cases are often thrown out too easily. The role of the judiciary and the quality of law enforcement perhaps does not fall within the scope of the roads policy, but its role in the current road safety environment is nonetheless acknowledged.

Education, law enforcement and punishment is a continuous cycle that need to be re-implemented in SA, otherwise the road fatalities will not come down. This will require political will and a 20 year implementation strategy with a focussed and driven team.

Other mechanisms within road safety include the following:

- In an attempt to reduce fatalities, the focus need to shift to reducing crashes. Currently the RTMC only reports on fatalities whereas they need to report and monitor all crashes.
- Road safety is multi-disciplinary, multi-dimensional problem. The Dept. of Education, Dept. of Health and Dept. of Justice must take co-responsibility and must become involved.
- Provinces, Metros and other authorities need training and skilled personnel.
- International research has identified that infrastructure are the cause of 5% to 10% of crashes and it should be noted that SA design standards are generally high. However, the maintenance of infrastructure is generally a problem that can result in higher crash rates.
- At present, no data exist to understand the causes of accidents – whether they are infrastructure or driver related. The general conclusion is that they are more driver related.
- Compulsory Road Safety audits and peer review of designs by experienced professionals the best improvement that can be implemented.

4.3.14 Regional integration

Issues

Regional integration refers to planning, construction and maintenance of roads infrastructure across Southern African (SADC) Countries. The Regional Indicative Strategic Development Plan (RISDP) is a comprehensive development and implementation framework guiding the Regional Integration agenda of the Southern African Development Community (SADC) over a period of fifteen years (2005-2020). It was designed to provide clear strategic direction with respect to SADC programmes, projects and activities in line with the SADC Common Agenda and strategic priorities, as enshrined in the SADC Treaty of 1992. SADC developed the Regional Infrastructure Development Master Plan as a strategic framework guiding infrastructure development in Southern Africa.

Transport infrastructure throughout Southern Africa is more established than other infrastructural sectors. At present, most Member States of SADC maintain dedicated road agencies, while substantial improvements are underway for regional railways and air transport. In particular, three primary corridors – the North-South Corridor running north from Durban, South Africa; the Maputo Corridor running through Mozambique, and the Dar-es-Salaam Corridor in Tanzania – are the focus of most development. As these development corridors connect shipping ports to areas of industrial productivity, much infrastructure has been supplied by the private sector through public-private partnerships and user-pays principles. This system has proven effective, enabling road and railway development to commence where government intervention had previously stagnated.

By 2027, the following road projects are anticipated for operation:

- Dar es Salaam - Chalinze toll road
- Kazungula bridge
- Nata - Kazungula road upgrading
- Beitbridge - Chirundu road upgrading
- Tete toll bridge
- Western Corridor road in Zambia
- The development of an intraregional road asset management system

Challenges remain for the transportation sector.

- Even with Private Sector involvement, funding and technical capacity are lacking for maintenance and rehabilitation of the region's Roads, Railways, Ports, and Airports.
- Rural areas with much of the region's population still struggle with accessibility issues.
- The variation in funding levels across municipalities, provinces and SADC countries result in inconsistent road conditions and road quality. This impacts the extent of regional integration possible.

Desired outcomes

- Regional integration and coordination are effectively optimised on integrated SADC road networks.

Mechanisms

- co-operative policy development facilitated by strategic partnerships between government and a responsible and competent regional private sector;
- regional development fostered by strategic partnerships between international co-operating partners and regional stakeholders;
- The implementation of compatible policies, legislation, rules, standards and procedures in order to facilitate the integration of regional transport networks.
- Funding, legislation and coordination mechanisms to enable broad-based road infrastructure projects as part of long-range strategic plans.
- optimal utilization of public and private financial, human and other resources
- effective allocation of existing scarce resources;
- investment in joint human resource development programmes, information management schemes, research and development projects and technology transfer initiatives; and
- effective environmental management in accordance with relevant international and regional conventions/agreements.

5. WAY FORWARD

The next step is to prepare specific road infrastructure policies that have been internally ratified by the DOT for each of these building blocks or focus areas. The policies will then be presented to stakeholders including provinces, municipalities and other key agencies impacted by roads infrastructure.

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