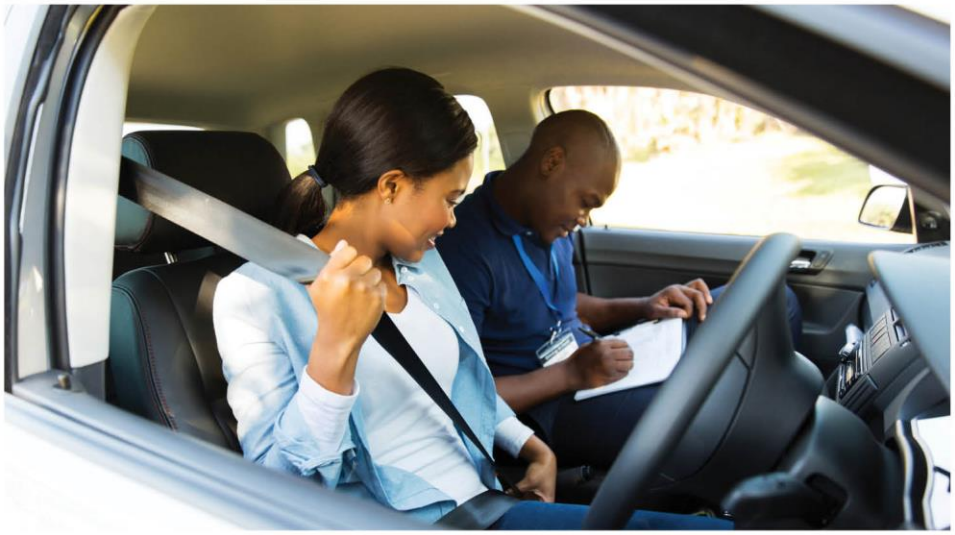
National Road Safety Strategy 2016-2030

transport
Department:
Transport
REPUBLIC OF SOUTH AFRICA



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Abbreviations and Terminology

BRICS	Brazil, Russia, India, China, South Africa
COTO	Committee of Transport Officials
CBRTA	Cross-Border Road Transport Agency
DBE	Department of Basic Education
DHET	Department of Higher Education and Training
DLTC	Driver Learner Testing Centre
DoJ	Department of Justice
DoH	Department of Health
DTI	Department of Trade and Industry
eNaTIS	Electronic National administrative Traffic Information System
GDP	Gross Domestic Product
GNI	Gross National Income
ISO	International Standards Organisation
NDP 2030	National Development Plan 2030
DoT	Department of Transport
NMT	Non-Motorised Transport
NRSS	National Road Safety Strategy
NRSCC	National Road Safety Co-ordinating Council
RABS	Road Accident Benefit Scheme
RAF	Road Accident Fund
RTIA	Road Traffic Infringement Agency
RTMC	Road Traffic Management Corporation
SABS	South African Bureau of Standards
SAIA	South African Insurance Association
SALGA	South African Local Government Association
SANRAL	The South African National Roads Agency SOC Ltd
STATSSA	Statistics South Africa
UN	United Nations
UNDA	United Nations Decade of Action (2011-2020)
UNGA	United Nations General Assembly
VRU	Vulnerable Road User
VSL	Value of a Statistical Life
WHO	World Health Organisation

Foreword by the Minister

Road crashes have been identified both globally and domestically as a socio-economic challenge. It is estimated that globally 1,25 million people die annually due to road crashes and a further 50 million people suffer varying degrees of injuries as a result thereof. This has dire consequences on society as it results in an increased burden on the social security and welfare system of a country, with an ever increasing loss of skills and rising costs to the economy. However, of most importance is the loss of lives and the subsequent broken families.

Of all the crashes, human factors accounts for a large percentage, confirming that these crashes are in fact avoidable and preventable. It is our belief that through this National Road Safety Strategy we will be able to change the behaviour and attitude of road users. This will afford us an opportunity to cement the partnerships with all relevant stakeholders in the development and implementation of this strategy. Thus, giving meaning to the axiom that road safety is indeed everybody's responsibility and should be observed all year round.

Since the dawn of democracy, our government has put programmes in place that are geared towards improving the socio-economic conditions of citizens of the country. This is evident from the successes that are registered in the implementation of an improved health core, social grants, employment creation initiatives, social housing, etc. All of this could potentially be reversed by the dreadful consequences of road crashes. This strategy is, therefore, part of government's efforts to ensuring a safer, better and secured life for all. With over two thirds of road crashes preceded by a violation of traffic laws, emphasis of the strategy will also be in intensifying law enforcement and strengthening the arm of the law.

This National Road Safety Strategy (NRSS) is a product of both national and international policies on road safety. In the development of the strategy, lessons learnt from previous strategies as well as existing international best practices were taken into consideration. This NRSS has a long-term strategic approach to tackling road carnage and is aligned to the National Development Plan (NDP)'s objective of improving the health status of South Africans. The strategy is also aligned with the safe system approach which acknowledges that humans do errors by nature and that the road infrastructure should therefore be forgiving. As part of the broader Implementation plan of the safe systems approach, there shall be aggressive marketing, awareness and promotion of the Road Traffic Safety Management System (ISO39001) for adoption and use by Government Departments, State owned Companies and the Private Sector.

I urge all South Africans to adopt this strategy as a guiding document to a country free of road crashes. The vigour and enthusiasm with which we displayed when developing this strategy should be

translated into action with its implementation. Implementing this strategy will be testimony and in congruence to our commitment of a South Africa with safer roads. One death is one too many and not under our watch shall it be that the road carnage continues unabated. We should all put shoulder to wheel and make this strategy work.

Ms Elizabeth Dipuo Peters, MP

Minister of Transport

Acknowledgements

The development of the NRSS was a collective engagement and consultation between and amongst the transport sector, government institutions and other key stakeholders in the public and private sector, as well as academia. The strategy takes into account all the relevant policies, protocols and other mandates for which the transport sector is responsible. The strategy reflects the strategic outcomes, oriented goals and actions the country seeks to achieve in the reduction of road fatalities, injuries and crashes, thus making the country's roads safer.

Executive Summary

One of the most pressing issues facing modern society today, both globally and particularly within the South African context is road safety. By 2030, road traffic crashes is expected to become the fifth leading cause of fatalities worldwide, overtaking AIDS, tuberculosis, and cancers of the trachea, bronchus, and lungs according to the World Health Organization (WHO)." In South Africa, approximately 23.5 people per 100,000[1] lost their lives on the country's roads in 2014. In comparison, the 2015 WHO Global Status Report on road safety affirms the global average of road fatalities at 17.4[2] per 100,000 and the average for middle-income countries, at 18.4**Error! Bookmark not defined.** fatalities per 100,000 population. The significant impact of road carnage on the economy and society at large provides a convincing case for decisive policies and strategies to address the problem.

The high number of Road Traffic Crashes (RTCs) and its associated consequences has a significant impact on the South African society which continues to hamper socio-economic development and impact on the well-being of all South Africans. This impact is measured in terms of human lives lost, 'pain, grief and suffering', as well as an increasing cost to the economy. The extent of the problem is exacerbated when road fatalities and injuries are seen in the context of contributing to a significant economic loss for South Africa. People injured or killed on our roads are often the breadwinners of their families and thus vital contributors to the economy at large. The total cost of road crashes on South Africa's road network for 2015 amounted to an estimated R143 billion equating 3.4 per cent of GDP. The economic and financial analysis emphasises the need to improve road safety in the country to ensure that South Africans live long productive lives and that fiscal resources be freed and appropriated to aid the country's development.

As a participant of the United Nations Decade of Action for Road Safety 2011-2020 (UNDA), South Africa has endorsed the global undertaking to save up to 5 million lives, and contribute to the prevention of up to 50 million serious injuries by 2020. In accordance with this commitment, the NRSS 2016-2030 has been developed, embodying the principles of the Safe Systems approach and giving effect to the five pillars of the UNDA a guiding framework for actions to improve road safety. In accordance with the UNDA, these pillars remain consistent in the NRSS as Road Safety Management, Safer Roads and Mobility, Safer Vehicles, Safer Road Users and Post-Crash Response.

The NRSS has taken into consideration previous efforts made toward addressing road safety problems in South Africa, by carefully reviewing previous road safety strategies developed. The key findings from these strategies highlight a lack of effective implementation, insufficient resourcing, misaligned prioritisation, and lack of broader stakeholder participation among the key issues previously experienced. As such, the NRSS focuses on the sequencing of proposed interventions in a manner that is realistic and implementable. In addition, the NRSS acknowledges that a number of key institutions were established through previous efforts and that the present task is the effective utilisation of these institutions through the enhancement of coordination and accountability in addressing road safety issues.

[1]RTMC, *Calendar Report* (2014)
[2]WHO Global status report on road safety (2015)

A review of international best practices demonstrates the importance of good institutional strength and a clear approach to improve road safety. Key areas of focus include: educating and training of road users, encourage good road user behaviour through enforcement, manage accurate and complete data to inform strategy, ensuring road infrastructure and environment must be forgiving and to ensure vehicles make the driving task easy and safe.

The vision of the NRSS is to ensure *"Safe and secure roads"*. This will be achieved by delivering on the strategic mission to attain a reduction in the number of fatal crashes, promoting responsible road user behaviour, providing safe road infrastructure, ensuring safe vehicles on South African roads and delivering quality road safety management.

The strategy has set a target to reduce fatal crashes by 50%, from the 2010 baseline of 13,967 fatalities to 6,984 fatalities by 2030 in keeping with the National Development Plan (NDP 2030). By evaluating the challenges observed in each of the respective pillars of the UNDA, strategic themes emerged that need to be addressed effectively in order for South Africa to achieve the desired state for road safety. The key strategic themes are:

- Improve coordination and institutional strength
- Improve road safety data systems
- Eliminate fraud and corruption
- Ensure adequate funding and capacity
- Enhance use of technology to protect road users
- Identify and address high risk locations
- Provide a self-explaining and forgiving road environment for all road users
- Enable regular road audits on new projects
- Increase vehicle safety standards
- Ensure vehicles on the road network are roadworthy
- Improve road user behaviour & involve communities in road safety
- Improve enforcement effectiveness
- Increase protection for vulnerable road users
- Increase effectiveness of first responses
- Simplify access to post-crash care

In line with the identified strategic themes, the NRSS identifies and outlines a comprehensive list of interventions. In order to ensure resources are used effectively, interventions are prioritised according to the expected impact on the reduction of fatalities as well as the ease of implementation. Interventions delivering both high impact and capable of being implemented with ease are highlighted as first priority.

The phasing of interventions is determined by short, medium and long-term periods. The short-term focuses on effective resourcing, improving institutional strength, implementing monitoring mechanisms and modifying road user behaviour. A focus area of the NRSS is road user behaviour and as such the strategy has highlighted the requirement for improved education initiatives, increased involvement of communities in road safety and improved effectiveness of law enforcement in order to tackle the issue.

Medium-term interventions aim to address challenges such as the betterment of vehicle safety standards, improvement in road design for the protection of all road users, addressing hazardous

locations, improving the effectiveness of post-crash response and increasing local road safety research.

The long-term interventions focus on the adoption of innovative road safety technology and driving institutions to become more proactive in the management of road safety.

Based on the analysis completed there are four critical areas for interventions that come to the fore. These areas are found to be either directly or collectively at the root of the challenges within the road safety environment and are equally the source of the solutions which can mitigate or resolve these challenges. It is therefore necessary to prioritise the interventions which will bring about a change in:

- **Road user's behaviour**, which is seen locally and internationally as the greatest contributing factor to road crashes. Changing behaviour can only be effected by ensuring users are *educated* and *aware of road safety*, *trained* to behave appropriately and effectively *discouraged* from transgressing laws through enforcement. This includes the need to eliminate corruption.
- With large proportion of deaths on the roads being pedestrian related, emphasis needs to be placed on **developing and refining infrastructure design aimed at protecting VRUs** specifically.
- The entire strategy hinges on the **effective leadership and governance** to oversee that implementation is completed and operational requirements are effectively addressed.
- **Data and knowledge management** is an enabling element and a major shortcoming in the South African environment. Addressing shortcomings in this space will allow for greater efficiency in the application of resources and better tracking of progress.

1. Introduction

Road safety has become a global issue that ranks as one of the most pressing matters facing society today. South Africa implemented various strategies and campaigns in the past, with varying degrees of success in slowing down the rate of fatalities over time. The objective of the NRSS is to create a safer road environment for all users with a significant reduction in the number of injuries and fatalities due to road crashes.

On a global level, the World Health Organisation (WHO) Road Safety Status Report of 2015 defined the problem of road injuries as a major public health issue. Road fatalities and injuries were projected to be the third leading contributor to the global burden of disease and injury by 2020[3]. Road traffic crashes are now the leading cause of fatalities in developing countries for 15-19 year olds and the second among 5-14 year olds[4].

Low and middle-income countries remain the most affected, because road traffic crashes and injuries are linked not only to the number of vehicles, road conditions and drivers' behaviour and attitude towards road safety, but also to the country's level of economic and social development. The challenges faced by many countries are exacerbated by poor road infrastructure, vehicle types and features, ineffective traffic law enforcement, poor driving practices, corruption and delayed implementation of road safety policies amongst other factors.

South Africa is classified as a middle-income economy[5]. The South African road fatality rate is reported to be 23.53[6] per 100 000 population. In comparison, the 2015 WHO Global status report on road safety, states the global average of road fatalities as 17.4[7] per 100 000 and the average for middle-income countries as 18.4 fatalities per 100 000 population[8].

South Africa's quest for increased and heightened awareness of and compliance with road safety management has been an on-going process with various efforts over the years.

A major step forward towards improving road safety in Africa was the 2007 African Road Safety Conference held in Accra, Ghana with support from the WHO and the Economic Commission for Africa. The objectives of the conference included reviewing progress made by African countries in improving road safety, advancing the development of national action plans for road safety for countries in the

[3](Murray, et al., 1996)
[4](Peden et al., 2010)
[5]Middle income economies are those with a Gross National Income (GNI) per capita per annum of more than $1,045 but less than $12,763
[6]RTMC, *Calendar Report,* 2014
[7]WHO Global status report on road safety 2015
[8]Values are based on aggregates of regional and global estimates of deaths by road user type for 2013 and earlier years

region, and identifying ways of mobilising resources to rapidly improve road safety. The conference led to strengthened resolutions among African countries to address road safety issues as a matter of urgency.

The full scope of the road safety problem was documented in the first global conference for Ministers of Transport which took place in 2009 in Moscow, Russia. This conference outlined the magnitude of the issues and stressed the urgent need for action to help prevent road traffic injuries and fatalities around the world. In 2010, subsequent to the conference in Moscow, the United Nations General Assembly (UNGA) A/64/255, unanimously adopted a resolution calling for a Decade of Action for Road Safety 2011–2020 (United Nations Decade of Action – UNDA).

The UNDA was launched five years ago on 11 May, 2011. The goals were endorsed by more than a hundred governments and member states, including South Africa, with the main aim of "stabilising and reducing" the projected level of global road fatalities by 2020, from the 2010 baseline. Collaboratively, participants to the UNDA are working towards saving five million lives and preventing up to 50 million serious injuries over this ten-year period.

In line with the launch of the UNDA, several countries released national road safety strategies in that same year or updated existing strategies. Some countries set targets for reducing serious injuries alongside their goals for fatality reduction. Based on the UNDA guidelines set out for ambitious yet feasible targets, most countries focused on modifications to quantitative targets, interim targets, sub-targets as well as performance indicators.

UNDA Global Plan and Five Pillars

As part of the UNDA, a Global Plan was developed to guide the implementation of the objectives, and to facilitate coordinated and concerted action. It was recommended that member states develop national action plans for the decade 2011-2020, in order to ensure standardisation, coherence and integration.

Out of the UNDA Global Plan, a guiding framework for actions to improve road safety was devised, referred to as the Five Pillars of the UNDA. In addition to these five pillars, South Africa at the Road Safety Summit 2015, highlighted the importance of legislation and youth (not specifically mentioned within the UNDA activities listing) as critical components unique to the country.

The UNDA Five Pillars aims to support member states in effectively assessing and addressing deficiencies in the respective road safety measures. In Table 1 below, the five pillars are listed complete with their respective elements.

UNDA Five Pillars of Road Safety				
Road Safety Management	Safer Roads and Mobility	Safer Vehicles	Safer Road Users	Post-Crash Response
Monitoring and Evaluation	Road Design (e.g. road function considerations)	Vehicle Standards	Legal Obligations (e.g. blood alcohol level)	Pre-hospital Response (e.g. first response training)
Funding	Road Environment (e.g. stray animals)	Vehicle Features (e.g. seatbelts, airbags etc.)	Fostering Compliance (e.g. Education and awareness campaigns)	Hospital Care
Coordination Mechanisms	Road safety audits	Vehicle Intelligence (e.g. use of technology)	Enforcing Compliance (e.g. speed management)	Trauma care
Data Management	R&D for safe Infrastructure	R&D for Vehicle Safety Technologies	Addressing particular needs of vulnerable road users	Quality Assurance
Knowledge management	Road maintenance	Vehicle Assessments	Positive engagement with road safety	
Advocacy and Partnerships		Vehicle roadworthiness	Youth	
Legislation and Regulation				

Table 1: Summary of Pillar Components (UNDA, 2011) (Road Safety Summit, 2015)

The Safe Systems Approach

A Safe System approach is an approach commonly used to achieve the vision of zero road fatalities and serious injuries and requires that the road system be designed to expect and accommodate human error. Safe System principles require a holistic view of the road system and the interactions between roads and roadsides, travel speeds, vehicles and road users[9].

This is an inclusive approach that caters for all groups using the road system, including drivers, motorcyclists, passengers, pedestrians, bicycle users, commercial and heavy vehicle drivers. Consistent with the NRSS long-term road safety vision, it recognises that people will always make mistakes and may get involved in road crashes, the system however, should be forgiving and in the occurrence of a crash, should not result in death or serious injury.

[9]Australian College of Road Safety

The Safe System approach is consistent with the approaches adopted by the safest countries in the world, many of whom also adopted principles of the UNDA plan. There are several guiding assumptions and principles to this approach:

- **People make mistakes:** Humans will continue to make mistakes, and the road transport system must accommodate these. The road transport system should not result in death or serious injury as a consequence of road error.
- **Human physical frailty:** There are known physical limits to the amount of force our bodies can take before we are injured.
- **A 'forgiving' road system:** A Safe System ensures that the forces in collisions do not exceed the limits of human tolerance. Speeds must be managed so that humans are not exposed to impact forces beyond their physical tolerance. System designers and operators need to take into account the limits of the human body in designing and maintaining roads, vehicles and speeds.

The UNDA five pillars, together with the Safe Systems Approach, formed the basis for the situational and problem analysis which was an important precursor to the development of the strategy.

A Revised Target

Over the years, South Africa has experienced a reduction in road traffic fatalities, with the figures decreasing steadily from 15,419[10] in 2006 to 12,702[11]in 2014. However, reductions in road deaths have not decreased at the rate required for South Africa to achieve an aspirational 50% reduction by 2020 from the 2010 baseline, as set out by the UNDA[12].

In alignment with South Africa's developmental approach, the National Development Plan 2030, seen largely as the country's strategy blueprint, sets national goals and objectives for the country. Chapter 10 of the document, in particular, classifies road crashes as a health issue and sets a target to "reduce injury, accidents and violence by 50% from 2010 levels"[13]. The NDP 2030 also outlines the following matters to be monitored and controlled including:

- Roadworthiness of vehicles;
- Vehicle driver behaviour;
- Alcohol and substance abuse; and
- Weaknesses in law enforcement.

The NRSS has taken into consideration the goals and targets set out by both the UNDA and the NDP 2030 and in accordance with emphasising ambitious yet feasible target-setting, advocates a long-term trajectory with 2030 as the country's target to reduce road fatalities by 50% from the 2010 baseline.

1.1. Legislative mandates and policies

[10]RTMC, 2014
[11]RTMC, *Calendar Report,* (2014)
[12] WHO, *Decade of Action for Road Safety 2011-2020: saving millions of lives* (2011)
[13]NDP2030: Chapter 10: Promoting Health; Goal 5; Page 334

The strategic framework outlined is informed by and draws from various legislation documents, which includes but is not limited to the:

- Constitution of the Republic of South Africa (Act 108 of 1996)
- National Road Traffic Act (Act 93 of 1996)
- Road Accident Fund Amendment Act (Act 15 of 2001)
- National Road Safety Amendment Act (Act 67 of 1991)
- Road Traffic Management Corporation Amendment Act (Act 24 of 2000)
- Road Accident Fund Commission Act (Act 71 of 1998)
- National Railway Safety Regulator Act (Act 16 of 2002)
- Administrative Adjudication of Road Traffic Offences Act (Act 72 of 2002)
- Cross Border Road Transport Act (Act 12 of 2008)
- The South African National Roads Agency Limited and National Roads Act (Act 7 of 1998), as amended (SANRAL Act)
- National Land Transport Act (Act 5 of 2009)
- Intergovernmental Relations Framework Act (Act 13 of 2005)

The strategy is further informed by departmental and sector plans and policies, which include but are not limited to:

- The White Paper on National Transport Policy 1996
- The 2006 Road Infrastructure Strategic Framework for South Africa
- 2011 National Development Plan 2030 (NDP 2030)
- Public Transport Turn-Around Plan 2015
- National Learner Transport Policy 2015

1.2. Outline of the document

As part of the country's commitment to the UNDA and the NDP 2030, South Africa is obliged to develop a Road Safety Strategy that is aligned with the goals and targets of both of these key documents. The DoT in collaboration with the RTMC, as the lead agency on road safety and supported by all the other road transport agencies of the DoT and other relevant public and private stakeholders, is responsible for leading this critical process of strategy development. The NRSS is aimed at addressing this obligation and is supported by Appendix C: Road Safety Strategy Roadmap to assist with the operationalisation of the NRSS. This document is structured along the following chapters as shown in Table 2 below.

Chapter	Description
1. Introduction	Provides an overview of the relevant legislative mandates and policies, the founding principles and assumptions and outlines the document structure.
2. Review of Previous Strategies	Overview of South Africa's previous road safety strategies and lessons learnt.
3. Best Practice Lessons	Reflects on selected international good practice on road safety and identifies relevant insights and interventions.
4. Situational Assessment	Shares the situational analysis, which describes the *status quo* of road safety in the country, identifies key challenges, estimates the economic and financial impact, and highlights emerging strategic themes.
5. Road Safety Strategy 2016 -2030	Outlines the strategic vision, mission, governing principles and targets. This section also includes the prioritisation and phasing of themes with objectives, KPIs and interventions listed per pillar to indicate the actions that are required in delivering the NRSS.
6. Concluding Remarks	Reviews the key outcomes of the document and suggests the next steps in finalising the NRSS.
Appendix A: Best Practice Country Examples	Outlines countries considered as global best practice examples and their relevance to the South African environment.
Appendix B: Economic and financial impact of road deaths and injuries	The economic impact assessment of road deaths and injuries comprises a series of values which, when combined, provide a view of the cost of road deaths and injuries to the economy of South Africa.
Appendix C: Strategy Roadmap	Outlines the practical components of the implementation of the NRSS. It includes proposed governance structures, prioritisation methodologies and phasing approaches. The document also outlines some of the details for individual road safety interventions identified in section 5.

Table 2: Document Structure Outline

2. Review of previous strategies

2.1. Overview of previous strategies

An overview of previous road safety strategies is included in order to understand previous approaches and to evaluate the extent of their impact. In particular, the following three road safety efforts and strategies have been reviewed in detail, with the aim of extracting key insights and building on their successes and foundations.

	Strategy	Period	Strategic Focus	Intervention measures	Delivery Successes	Delivery Shortcomings
1	**Road Traffic Management Strategy**	1996 -2000	• Quality of road vehicles • Type of road users, drivers and pedestrians • Road traffic operations • Road environment • Interaction of traffic network	• Campaign focus • Increased law enforcement • Adjudication of offences • Enhancement of road user knowledge • Enhancement of road user skills and attitudes • Incident management • Road traffic engineering • Traffic legislation • Information management • Licensing and registration • Road traffic related research and development	• Successful education campaign • Introduction of road safety related Acts - AARTO - RTMC	• Institutions in developmental phase • Infrastructure upgrades • Addressing of driver fitness • Vehicle fitness • Reformation of regulatory and monitoring institutions

	Strategy	Period	Strategic Focus	Intervention measures	Delivery Successes	Delivery Shortcomings
2	**Road to Safety Strategy**	2001 - 2005	• Institutional structure and foundation • Road environment • Driver fitness • Pedestrian safety • Vehicle fitness • Reform of regulatory and monitoring institutions • Communication campaigns on user behaviour	• Standards and rules • Enforcement and Compliance • Education • Institutional reform	• RTMC operationally established • Establishment and operation of the National Call Centre • Appointment of a national enforcement coordinator • SABS inspection of Vehicle Testing Stations	• Partial and delayed implementation • Insufficient skills and personnel • Inadequate enforcement
3	**National Road Safety Strategy**	2006 onwards	• Road safety management • Road environment • Vehicle fitness • Driver fitness • Institutions	• Enforcement • Coordination of government function • Data gathering • Capacity Development	• Increased patrolling of hazardous areas • Improved alcohol testing and prosecution • Mini road blocks and increased enforcement	• Partial implementation of commitments • Inadequate monitoring and evaluation to measure the effectiveness of the initiatives

Table 3: Summary of Previous Strategies

2.2. Lessons learned from previous strategies

Over the years, progress has been made in a number of road safety areas. Specifically, improvements have been made in the framing of the road safety challenges in the country, with an increasingly clearer and more holistic focus. Major themes across all strategies have been aligned to current best practice and a good understanding of the major problems facing road safety has been developed. While the implementation of previous strategies has been limited, recognition must be given to efforts made in the legislative and institutional environment, which have provided a sound foundation for new interventions, such as those proposed in this strategy, upon which to build.

Outcomes from the analysis of previous strategies reveal four key insights that this strategy aims to address. These insights are detailed as follows:

Insights from previous strategies	Associated UNDA Pillar
1. The critical role of stakeholder engagement • Any new strategy needs to clarify the role played by all responsible stakeholders to minimise fragmentation of efforts and contestation of responsibility • Include non-governmental institutions to support and play their part in road safety	• Pillar 1: Road Safety Management
2. Prioritise interventions appropriately • Prioritise and sequence interventions in accordance with capacity to execute • Using data driven intelligence and tailoring to the specificities of the South African context • Increase the focus on the implementation and management	• Pillar 1: Road Safety Management
3. Education of road users • Focus on education of all road users and promote responsible behaviour on the road	• Pillar 4: Safer Road Users
4. Quality of crash data • The collection and management of data needs to be improved to enable the completeness of data to help make interventions more specific	• Pillar 1: Road Safety Management

Table 4: Lessons from Previous Strategies

3. Best Practice Insights

Road safety strategies from seven countries have been assessed in order to extrapolate lessons and insights to assist in the development of the new road safety strategy. This chapter summarises the key insights from each of the best practice strategies. The importance of this exercise is to:

- Benchmark the strategic focus of this strategy with global best practice;
- Consider the successes and shortcomings of previous efforts made in countries with similar road safety environments, in an attempt to learn from; and
- Interrogate the strategic thinking of previous efforts in order to discover solutions that can be adapted and improved on to suit the unique South African context.

The seven countries selected as global examples of best practice were considered based on multiple criteria, the most important being success in their efforts to reduce the number of lives lost on roads. These countries were also leading global examples in at least one or more of the following aspects, which made up the criteria for consideration:

- Road safety management
- Road safety education
- Creating awareness around road safety
- Innovation in solutions to address road safety issues
- Road user focus
- Road design, engineering and environment
- Road safety excellence in a middle income country
- Global recognition for road safety project execution

Refer to appendix A for information further outlining input from each country to this study.

3.1. Insights

The insights and lessons from the reviewed best practice documents are taken from two different perspectives:

1. Those relating to the strategic approach; and
2. Those related to the operational approach (specific interventions).

The table below captures the underlying philosophies and strategic principles of the global best practice strategies.

		Underlying Philosophy	Key Principles
	Description	*The philosophy informs the perspective on road safety. This is used to identify and prioritise interventions*	*Fundamentals which need to be adhered to in developing the road safety strategy*
Best Practice Countries	**Sweden**	• Road designers are ultimately responsible for level of safety in the system	• Traffic system must adapt to users • Amount of trauma the human body can tolerate is the basic parameter • Vehicle speed is the most important regulating factor
	Netherlands	Road safety is about: • Preventing human errors • Ensuring crash conditions don't exceed human tolerance levels	• Functionality of roads • Homogeneity of roads • Predictability of infrastructure to road users • Forgiveness of road environment • Awareness: Users' ability and assess capacity to drive
	Ireland	• Road safety is about planning to contain the defined problems	• Education • Enforcement • Engineering • Evaluation
	Australia	Road safety is the combined effect of: • Speed • Safety of vehicle • Level of protection provided by roads	• Building a national road safety culture • Data driven targets • Safe systems principles • Corporate responsibility • International collaboration
	United Kingdom	• Road safety is about planning to contain the defined problems	• Freedom of local authorities to tailor solutions • People must be inspired to drive local solutions • Introduce new regulation only as last resort • Effective and efficient allocation of resources
	Argentina	• Varied	• Follow World Bank road safety project guidelines • Primary emphasis on empowering lead agency to enable effective delivery of its institutional management functions
	Wales	• Varied	• Support sustainable development • Tackle social disadvantage • Meet equal opportunity obligations

Table 5: Best Practice Philosophy and principles

In the development of this document, further insights were extrapolated relating to the key strategic areas of focus of these best practice examples.

Strategic Considerations	Insights
Underlying philosophy	Clearly define the core question/areas which your road safety strategy needs to address in order to have the desired impact and for it to be successful and sustainable over the long-term.
Road safety is a shared responsibility	The responsibility of road safety belongs to all, but governance and accountability must be assigned to government. Applying this as a principle allows the state to involve corporate organisations, insurance companies and other non-state institutions in the process and establish broad incentives for safe behaviour.
Road safety is a developmental challenge	Particularly in the case of Argentina and Wales, road safety is framed within the developmental context of the country. The strategy should frame its underlying principles within South Africa's development context and the capabilities that exist in it.
Safe systems approach	Most countries applied the safe systems approach shifting away from only looking at human behaviour.
Link problems to action priorities	Assess the problem, policies and institutional setting relating to road traffic injury and the capacity for road traffic injury prevention in the country. Link the analysis of the main problem areas directly to the choice of priority areas.
Scientific choice of measure gives legitimacy	If the set of actions chosen is perceived as evidence based, people are more likely to perceive them as legitimate and relevant. The availability of accurate data is however a precondition for this. South Africa needs to prioritise this.
Enable execution	Most countries specified deadlines for the actions proposed. All of them assigned costs and defined sources of funding. Both these examples show the importance of allocating human and financial resources to addressing the problem.
Monitoring and evaluation	An interesting lesson emerging from the UK was the outcomes-based approach taken to monitoring progress. Instead of setting targets related to casualty data (e.g. 10% reduction in number of fatalities), the government defined the desired outcomes (e.g. People training) and measured stakeholders against those outcomes (e.g. number of people being trained). Applying a combination of these mechanisms will assist in evaluating all important areas of the NRSS.

Table 6: Best Practice Strategic Insights

Further analysis of the various action plans reveal the following insights and lessons that can be considered in the development of this document:

Operational Considerations	Insights
Education and training of road users	• Initiate regular campaigns for raising awareness. Campaigns should be frequent, monitored, evaluated, and supported by complementary enforcement measures • Stakeholder mobilisation for road safety education partnerships. The Irish strategy includes commitments to work together with industry and other authorities • Introduce a graduated driver licensing regime drawing lessons from the Australian model
Enforcement of road traffic rules	• Cross border enforcement of traffic laws • Mapping of speeding "black spots" (hazardous locations) to enable effective enforcement of these locations • Education of drivers on considerations when travelling abroad (regarding road rules)
Safe infrastructure	• Road safety audits as part of infrastructure safety management on national roads • Junctions turned into traffic circles with the objective of reducing the number of conflict points and vehicle crossing speeds
Using modern technology	• Looking into intelligent traffic management systems that can read the road situation and adapt speed limits accordingly • Automated data gathering and processing, for example automatic detection of speed offenders through radars that can measure a vehicle's speed at some distance, thereby detecting speed offenders even if they slow down just before a camera • Alcohol ignition interlocks; using them to a wider extent to identify repeat offenders
Road safety management	• Establish a lead agency • Empower the lead agency operationally through funding and human resources • Empower the lead agency through legislation, by giving them the authority to fulfil a certain distinct role to which they are accountable

Table 7: Best Practice Operational Insights

4. Situational assessment

In order to develop a relevant and responsive strategy it is important to develop an understanding of the context and provide an evidence-based outline of existing challenges as a key component of the strategy. Therefore, South Africa's positioning and context, in terms of road crash statistics, is detailed as a first step below, followed by a UNDA Pillar-based analysis of road safety challenges in the country. An additional key element that the situational assessment addresses is the economic and financial impact that road crashes, injuries and fatalities have on the broader economy. In understanding and addressing the key challenges, strategic themes have been identified and targeted responses formulated in order to affect the trend with regard to road incidents, fatalities and injuries within the country.

A critical point of consideration in the strategy is the lack of a single data collection and management system in the country resulting in different agencies using different systems to record and manage information. The information and data of the RTMC was utilised as a key informant for this strategy. It is acknowledged that crash data is critical for the establishment of trends relating to fatal crashes and fatalities and is therefore imperative that current available data be used to do so. Data management is a focal issue to be addressed to improve both the quality and management of the data and related information.

4.1. Overview of crash statistics

The crash statistics data was used to create the context for fatal crashes and resulting fatalities, human population growth, vehicle population and driver population. The last three are important indicators to determine the ratios and/or percentages that highlight the severity of the problem. The number of road crash fatalities is one of many indicators used when assessing the state of road safety in a country.

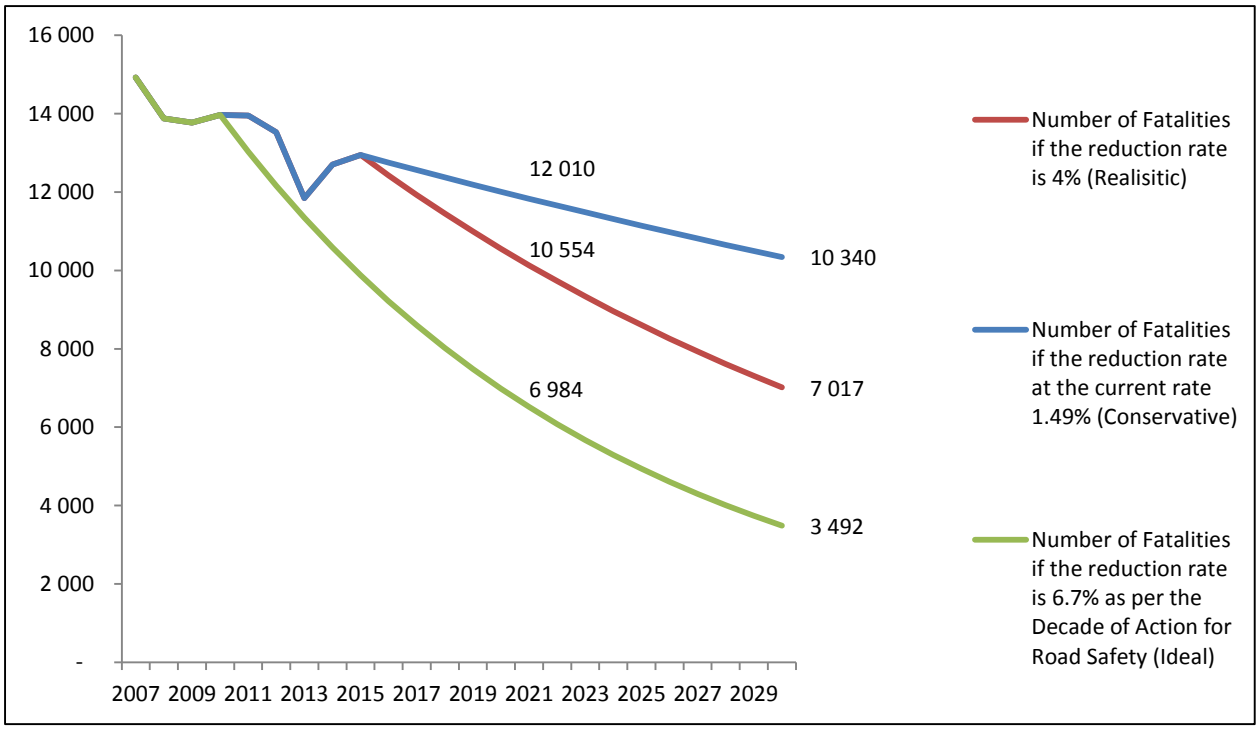


Figure 1: Number of fatal crashes and fatalities (RTMC, 2014)

The information presented shows a decreasing trend in both fatal crashes and persons killed between 2005 and 2013 before reversing in 2014. Figure 1 above represents the three scenarios which are based on the (i) five year trend 2010 – 2015 trend; (ii) 4% estimated decline rate if South Africa is to decrease the road crash fatalities by 50% from the 2010 base by 2030 (target set by the NDP) and lastly, (iii) based on the 6.7% rate (aligned to the 2011 to 2020 Decade of Action) rate of 6.7%.

Implied therein is a 4% year on year reduction. Therefore, the first challenge for the strategy is to reduce road traffic fatalities by a minimum of 400 fatalities annually. When viewed against the DoT's[14] reduction target of approximately 700 road fatalities annually. The new target and timeframe may represent a more feasible approach to tackling road fatalities specific to South Africa's current situation.

Human population

The South African population has grown steadily at an average of at least 1.4% per annum. Figure 2 presents the annual Human population figures that are used to determine annual fatality rates per 100 000 populations a global comparative measure used to measure a country's road safety performance.

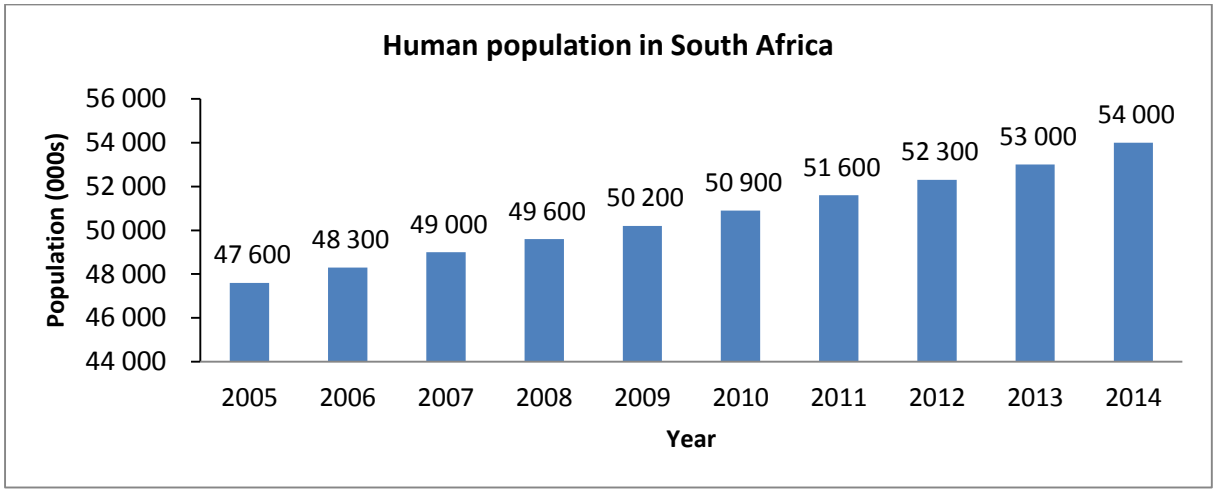


Figure 2: Population growth from 2005-2014 (Statistics South Africa)

Vehicle population

The vehicle population grew by 4.0% annually from the year 2005 to 2014 as illustrated in Figure 3 **Error! Reference source not found.**below. This increase in additional vehicles on the road places additional strain on the road network and increases the likelihood of crashes occurring. The vehicle population may include vehicles that have been written off and which citizens, through unregulated processes, have had an opportunity to purchase, fix and re-register. These vehicles pose a significant risk as they are not subjected to SABS compliance testing.

[14]DoT, *Strategic Plan 2015/16 – 2019/20,* (2015)

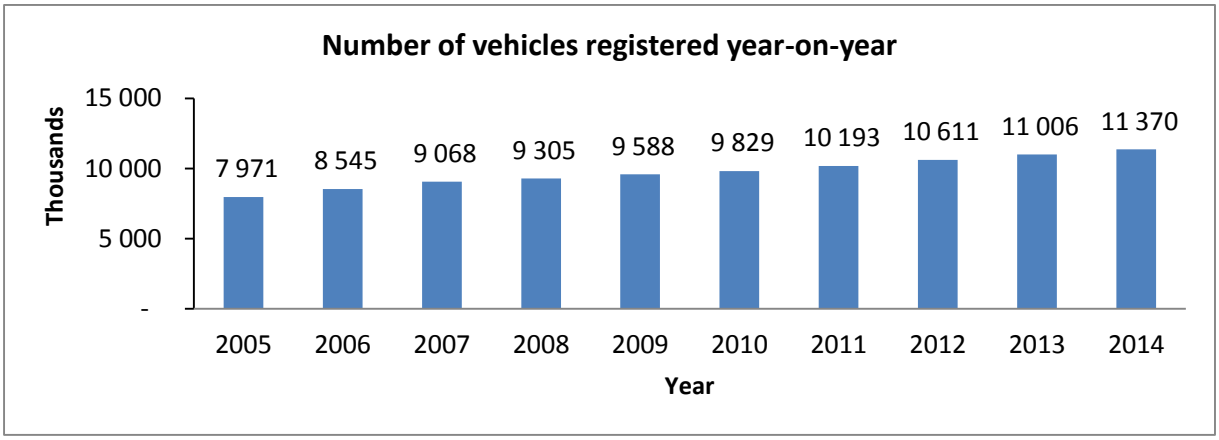


Figure 3: Increase in registered vehicles, 2010-2014 (RTMC, 2014)

Driver population

The rate at which drivers' licences are issued has increased annually by 4.5% between 2005 to 2014. When the increase in drivers' licenses is considered, it is clear that this increase has outpaced that of the population growth. The cause for concern around such growth patterns is not the relative size thereof, but rather the quality of drivers produced by the driver education system given the unregulated driving school sector as well as multiple claims of corruption within the driver licensing sector. Poorly trained drivers undermine any effort to improve road safety in the country.

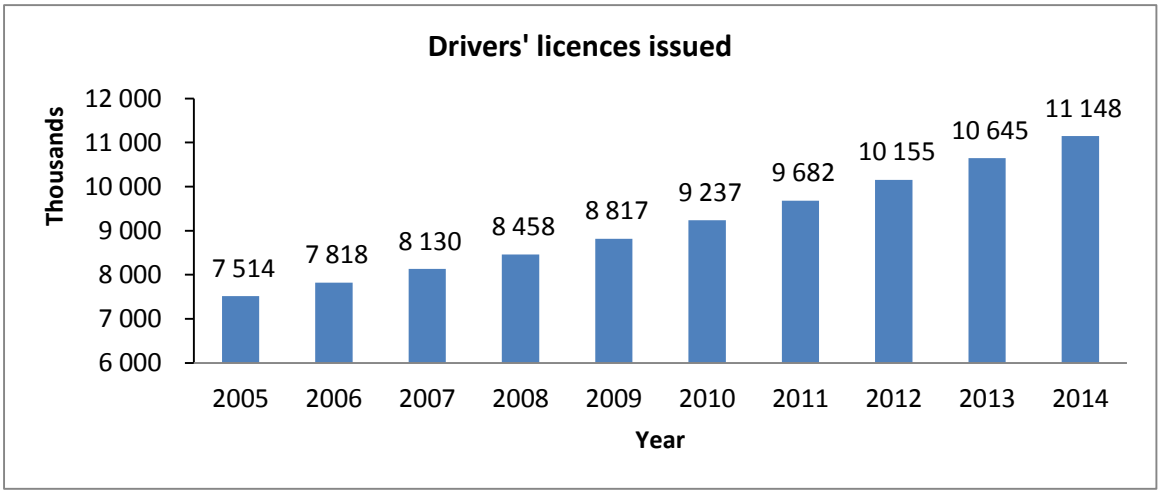


Figure 4: Drivers' licences issued from 2004 to 2014 (RTMC, 2014)

4.2. Causal analysis of fatal crashes

In order to assist with the identification of problems underlying crash rates, analysis of the causes of fatal crashes in particular is useful. Local research conducted by the RTMC determined the following breakdown of crash causes from South Africa's fatal crashes data (RTMC 2014).

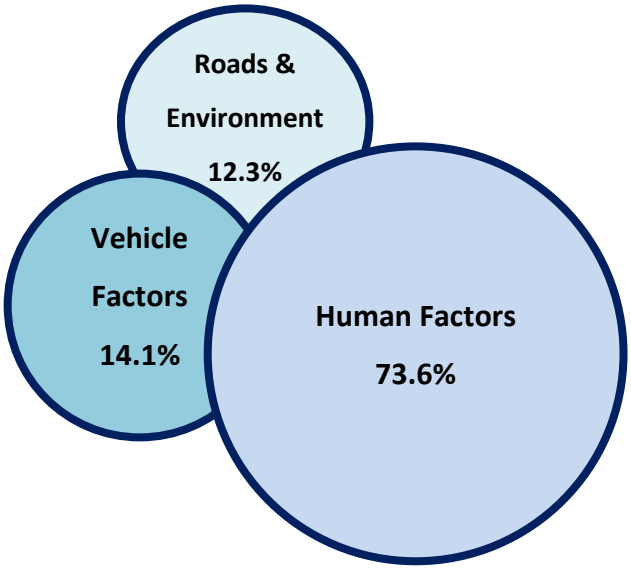


Figure 5: Factor Contribution to Fatal Crashes (RTMC, 2014)

These causes are reinforced by the global best practice countries in Table 7: Best Practice Operational Insights, specifically emphasising addressing road user behaviour and the interaction with the road environment. Furthermore, these figures are broadly similar to those found in the UK (87% human error; 2% vehicle defects and 10% road environment)[15] but markedly different from a recent analysis from the US, which indicated that only an estimated 2% of crashes were attributed to both environment and 2% to vehicles with 94% being human error[16]. In the South African analysis vehicle factors featured significantly higher, but this is more likely given the different vehicle standards that apply across the countries considered.

It is clear that in all of these analyses, human error is a predominant cause of road crashes and, as such, most of the efforts in reducing crashes must be geared toward firstly understanding the reasons for the occurrence of this human factor, and in accordance therewith, decreasing the opportunities for it to occur.

4.3. Analysis of Road Safety Challenges according to the 5 UNDA Pillars

In order to identify and articulate the major challenges facing road safety in South Africa, within the framework of the UNDA Pillars, the following sources, platforms and engagements were used as the basis for informing these challenges:

- Road Safety Summit 2015 held in Cape Town and convened by the DoT. The delegates at this summit represented stakeholders from across road safety and related sectors. The summit was structured and facilitated to get input relating to the challenges facing Road Safety within the country. The record of the summit discussions was a key informant in shaping this section of the document.
- RTMC road safety data and strategic documents relevant to the NRSS.
- Research was conducted to establish other information available and to provide supporting data for the challenges identified at the summit. As far as was possible, anecdotal evidence was not considered in the identification of road safety challenges.

[15] UK DFT Reported Road Casualties Great Britain 2014.
[16] Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey 2015

- Furthermore, stakeholder engagement at national and provincial level, together with a stakeholder survey was undertaken to verify the identified challenges. Stakeholder meetings where attended by departmental representatives from all three spheres of government, SALGA, non-government organisations and the private sector.

PILLAR 1: Road Safety Management

In accordance with the UNDA framework, road safety management involves the creation of multi-sector partnerships and the designation of a lead agency with the capacity to develop and lead the delivery of national road safety strategies plans and targets. This is underpinned by data collection and evidential research to assess countermeasure design and monitor its implementation and effectiveness.[17]

The responsibility for road safety is attributed to multiple stakeholders, with direct or indirect accountability. This transcends all spheres of government and a myriad of functional departments and entities, including both public and private organisations, which makes coordination, integration and execution a massive challenge. The Constitution of South Africa (Act of 1996) is the legislative foundation that assigns road safety related functions. Schedules 4A and 4B of the Constitution provides for concurrent mandate at national, provincial and municipal level for functions relating to road safety including public transport, public works, road traffic regulation, regional planning and development and vehicle licensing. Schedules 5A and 5B of the Constitution further indicates areas which are the responsibility of provincial and local government and include provincial planning, provincial roads and traffic, street trading, street lighting and traffic and parking. Other Departments which are pivotal to any road safety strategy include the Department of Basic Education (DBE), Department of Higher Education and Training (BHET), Department of Health (DoH), the South African Police Services (SAPS), Department of Justice (DoJ) and National Treasury. By virtue of the Constitutional mandates of the scope of road safety, the topic is institutionally widespread, even without consideration of the non-governmental environment, thus making it a challenging management task.

It is therefore critical for appropriate cooperative and inter-governmental agreements, formal partnerships and oversight structures to be established, to ensure road safety is dealt with in a cohesive, transversal and integrated manner. This is enabled by the existence of the Department of Co-Operative Governance and Traditional Affairs and legislation in the form of the Inter-governmental Relations Framework Act (13 of 2005)

The importance of driver training and its role in road safety warrants on-going focus particularly from a management perspective. This sector is to a large degree subject to evolution in modern technology, vehicle design, changing road design and driver behavioural patterns all critical areas of consideration regarding the manner in which drivers are taught and equipped. The current K-53 system being taught to new drivers is deemed out dated and an improved solution must be developed cognisant of the changes due to modernity, and responsive to producing better drivers. Regulation of driving schools and instructors or examiners is a further shortcoming of this sector that requires resolution to ensure improved driving standards and driver capabilities.

The prevalence of fraud and corruption in the road transport sector is well publicised but the detail thereof not sufficiently documented. Former Transport Minister Jeff Radebe acknowledged this issue as a “threat posed towards road safety.” In 2012, the RTMC established the National Traffic Anti-

[17]Global plan for Decade of action for road safety 2011-2020

Fraud and Corruption Unit to combat acts of fraud and corruption by collaborating with other law enforcement agencies. The mid-term Country Report 2015 to the UNDA indicates that as a result of this unit, several prosecutions for unlawful acts across the traffic environment have been instituted. The report makes further reference to the notion that most criminal activities pivot around illegal and irregular acquisition of learner and drivers' licences as well as irregular acquisition of Roadworthy certificates in various DLTCs.

The effects of fraud and corruption further impact on the manner in which traffic laws are enforced, enabling an environment where traffic law enforcement can be perceived as poor. The issue of suitably qualified traffic officers, the attitude of traffic police towards motorists and the disrespect shown by motorists towards traffic officers are all additional contributing factors to this issue.

The aforementioned challenges to road safety management are often seen as indicators of the need for more stringent control systems and management processes including the improved use of technology.

Summary of challenges under Pillar 1:
Fragmentation in the execution of Road Safety interventions
Lack of cooperation between Government Departments
Limitations in the National Crash Data
Prevalence of fraud and corruption
Constrained resources for road safety strategies
Absence of driving school-legislation
Outdated approach and methodology to driver testing (K53)
Inconsistency in road safety governing norms and standards

Table 8: Key challenges Identified: Road Safety Management

PILLAR 2: Safer Roads and Mobility

The safer roads and mobility pillar focuses on road design and the environment with the intention of protecting users. In line with the Safe Systems approach, this strategy acknowledges that people will make mistakes. As far as possible, road design must guard against these human errors resulting in fatalities or serious injuries. This requires, but is not limited to, intelligent and forgiving road designs[18], minimising risks associated with the road environment, identification of hazardous locations through regular road safety assessments of road networks, road safety audits on new road infrastructure projects, as well as continuous research and development to ensure the provision of appropriate road infrastructure solutions for South African road safety challenges. It is with this understanding, that evidence of existing challenges within this pillar was sought.

[18]Netherlands and Sweden are global best practice in this regard

As was seen in Figure 5, the road infrastructure and environment in South Africa is estimated to have a 12.3% causal contribution to fatal crashes.

Data from the RTMC (2014) provides a further breakdown of this contribution, as reflected in Figure 6. Sharp bends are listed as the leading contributor to fatal crashes under this category. Furthermore, evidence from the Netherlands[19] and Sweden[20]point to road design as a critical determinant of the severity of fatal crashes. In the instances recorded, it would seem to indicate that road design amendments need to focus on managing human error. Physical attributes on roads such as blind rises, blind corners and sharp bends tend to facilitate human error and these need to be addressed.

The data also indicates a need to investigate the extent to which factors such as speed limits are factored into road design, this not discounting that human behaviour remains the leading driving element for speeding. Internationally speed limits have been reduced over the years in line with Safe Systems principles, yet in South Africa no such review has been officially carried out. Furthermore, South Africa has a shortage of road safety engineers – a challenge which might add to the road design issues made apparent in the data. The challenges presented by the road network system cannot be fully addressed without increasing the number of technical specialists in the field of road safety engineering.

Figure 6 (below) indicates wet road surfaces and poor visibility as the second highest factor among the road and environment contributors. This can be addressed through effectively identifying and addressing hazardous locations.

According to data presented in Figure 6, poor road surface conditions contribute to 8.3% of total accidents; this suggests that there are roads in South Africa where maintenance has not been carried out adequately. According to the DoT, the country currently sits on a road maintenance backlog of 37%[21], which will only be cleared at a cost of approximately R197 billion. This alone is a critical challenge within the road and environment pillar.

Another challenge highlighted in the figure is the risks that wider road environments pose to users. The safety of both motorised and non-motorised road users is placed at risk due to some road network areas having insufficient lighting and due to poor protection against stray animals wandering onto the road.

[19]Sustainable Safety in the Netherlands, 2006

[20] J.Whitleg and Haq, G. (2006). *Vision Zero: Adopting a target of zero for road traffic fatalities and serious injuries*

[21]Committee of Land Transport Officials Research (2014)

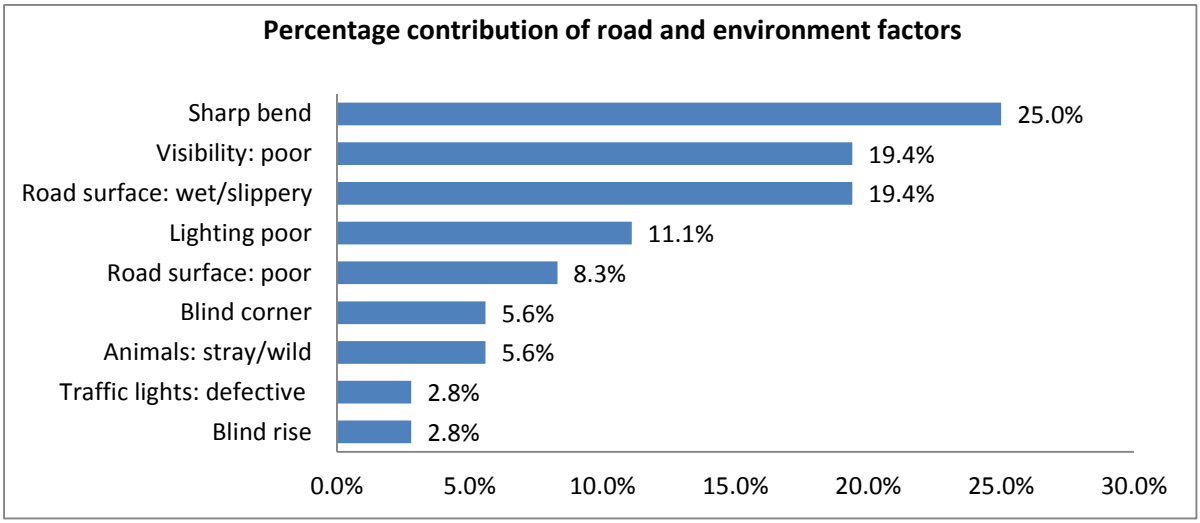


Figure 6: Road and environmental factors resulting in fatal crashes (RTMC, 2014)

Summary of challenges under Pillar 2:
Lack of forgiving road infrastructure for vulnerable road users and non-motorised transport
Limited local research in the area of safe infrastructure developments and solutions
Shortage of road safety engineering capacity
Continued increase in road infrastructure maintenance funding backlog
Speed limits not tailored to road environment and not aligned to international best practice
Lack of Road Infrastructure Safety Audit programmes within road authorities to identify high risk roads and hazardous locations

Table 9: Key challenges Identified: Roads and Mobility

PILLAR 3: Safer Vehicles

In accordance with the UNDA, a safer vehicle framework encourages the universal deployment of improved vehicle safety technologies for both passive and active safety through a combination of harmonised relevant global standards, consumer information schemes and incentives to accelerate the uptake of new technologies.[22]

As is evident from Figure 7, vehicle factors account for 14.1% of road crashes. Vehicle design and roadworthiness should not be discounted as possible triggers for poor driver behaviour subsequently resulting in crashes. Figure 7 reflects the RTMC's 2014 analysis of these particular aspects of fatal crashes. It can be seen that tyres are a major issue as both burst and smooth tyres suggest tyres not being replaced/maintained regularly enough to maintain required roadworthiness standards. To address this and other issues greater emphasis needs to be placed on law enforcement interventions aimed at ensuring that vehicles are roadworthy.

[22]Global plan for Decade of action for road safety 2011-2020

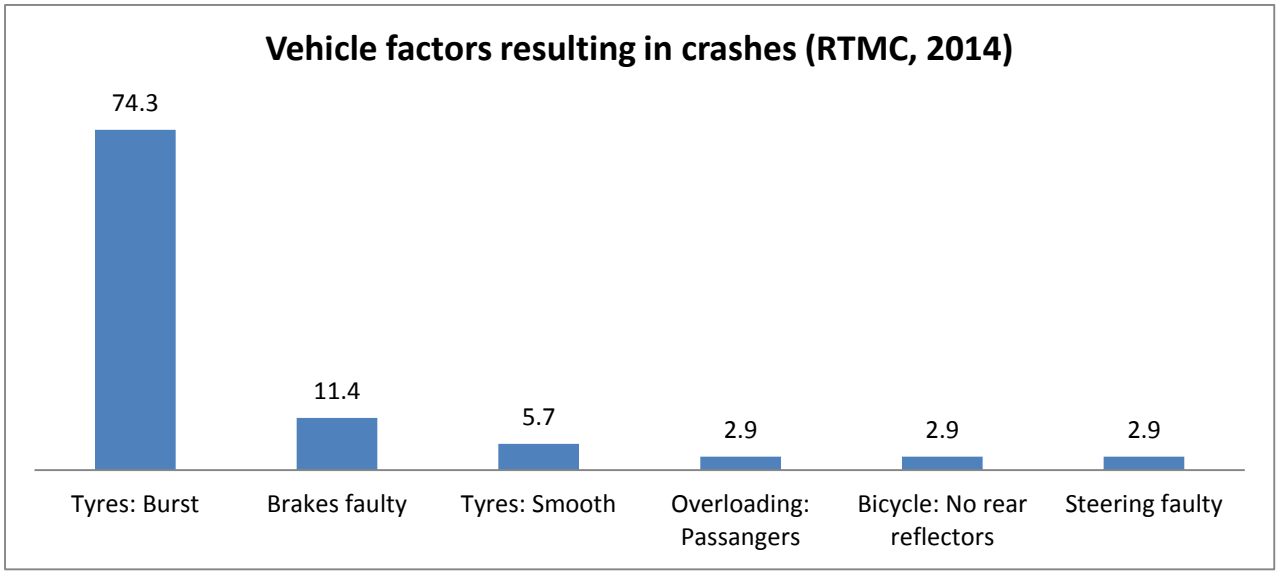


Figure 7: Vehicle factors resulting in fatal crashes (RTMC, 2014)

Summary of challenges under Pillar 3:	Applicable Vehicle type
Safety manufacturing standards/ requirements for vehicle manufacturers need to be enhanced and set	New, locally manufactured and imported vehicles
Harmonisation of appropriate vehicle standards; specific focus on vehicles from neighbouring countries not meeting local technical requirements	All / Foreign registered vehicles
Prevalence of non-roadworthy vehicles	All
Number of overloaded vehicles	All
Lack of periodic vehicle inspection of older vehicles	All
Corruption and fraud at vehicle testing centres	All
Proliferation of vehicle testing stations and inadequate regulation of the industry	n/a
Limited private sector engagement on how to implement technologies for fleet management for improved road safety	Industrial, fleet owners
Lack of adequate technological innovation for on board vehicle control to enhance road safety	All
Basic safety features for public transport vehicles are lacking (e.g. rollover bars, speed governors, seat belts, etc.)	Public transport
Poor compliance and adherence to operator (freight and public transport) licensing laws	Heavy industrial / tankers / Public transport
Unregulated and non-compliance with regard to people transportation e.g. scholar transportation using bakkies and open vehicles	Public transport / passenger vehicles
Low level of insurance cover; causing many repairs to be completed to lower than required standards	All

Table 10: Key challenges Identified: Safer Vehicles

PILLAR 4: Safer Road Users

According to the UNDA framework, the safer road users pillar is largely geared toward developing comprehensive programmes to improve road user behaviour and attitude. Sustained or increased enforcement of laws and standards combined with public awareness/education campaigns are developed to promote safer road users.

From the RTMC analysis, human behaviour was determined as having a 73.6% causal contribution to fatal crashes. Data from the RTMC (2014) provides a further breakdown of this contribution, as reflected in Figure 5. By addressing the human behavioural element a significant number of fatal crashes can be prevented. Behavioural issues can be addressed through various means mainly contained within education interventions and improved enforcement of road rules.

Figure 8 **Error! Reference source not found.**below shows the human factors contributing to road crashes as reported by the RTMC. It should be noted that despite jay-walking being identified as the highest factor contributing to crashes, the behaviour of pedestrians is also driven by the lack of infrastructure to enable safer commuting on the road network e.g. pedestrian bridges across busy roads, lack of suitable/paved verges, etc. It is important to note that speeding, overtaking into oncoming traffic, intoxication (of drivers and pedestrians) and fatigue are all behavioural issues that need to be addressed both through education and effective law enforcement.

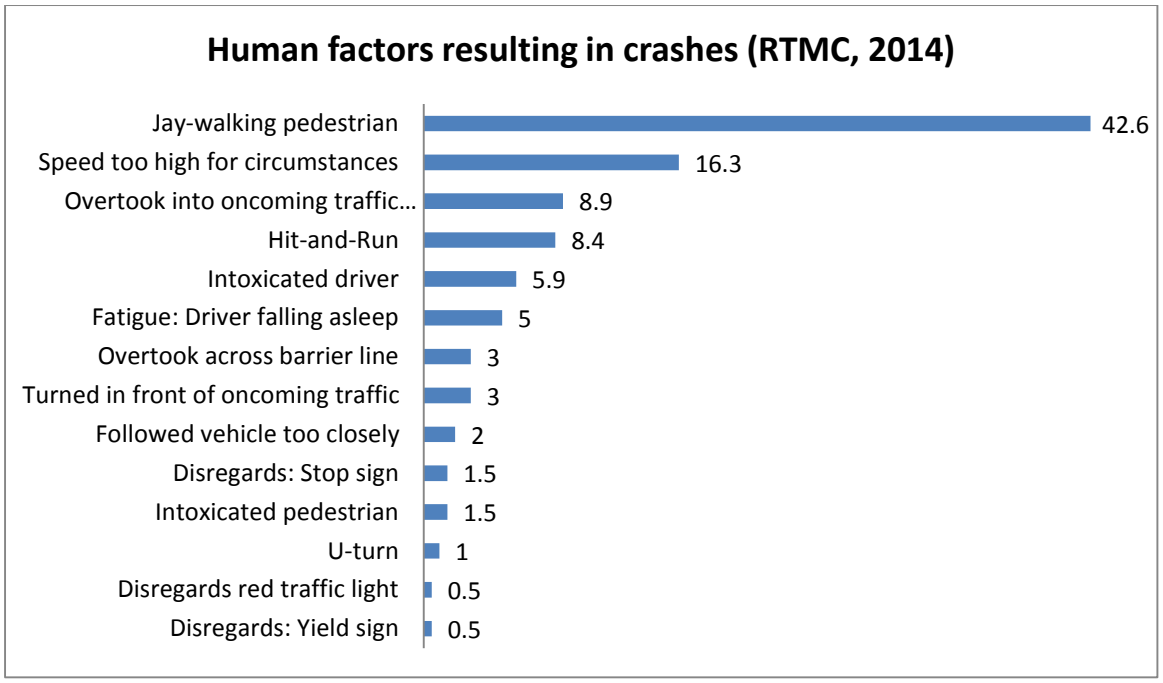


Figure 8: Human factors resulting in fatal crashes (RTMC, 2014)

In many fatal crashes, vehicle speed plays a key role. Excessive speed is one of the most common human factors in crashes as the energy that is released during a crash is directly proportional to speed, and also to the stopping distance that is required. However, research has shown that distracted and inattentive drivers are increasingly becoming a point of consideration in the analysis of driver behaviour.

According to a recent report by the RTMC on Inattentive and Distracted Driving (February 2016) engaging in secondary activities (unrelated to driving) while driving, "can be construed as indicative of a high level of general disassociation with the driving environment or an elevated risk of non-avoidance of potentially avoidable incidents with crash potential." Common driver distractions

include the use of cell-phones (including talking through the use of hands-free/Bluetooth devices), eating, smoking, grooming, passenger activity and sound from music or navigation devices.

Summary of challenges under Pillar 4:
Lack of road safety public awareness and education; for adults, youth and learners
Learners and driving testing processes are out dated and do not include road safety prevention elements
Non-compliance with road laws resulting in an increasing number of moving violations
A significant proportion of alcohol and other substances related crashes due to weakness in law enforcement and prosecution of intoxicated drivers
Increase in distracted driver behaviour
Lack of accountability by road users reflected in the non-payment of fines and the bribery of traffic officers
Limited engagement with youth on road safety interventions (data based on age of victims)
High proportion of fatal crashes (including pedestrian crashes) occurring under night time conditions, despite traffic volumes being lower during such times
Inadequate local research on road safety

Table 11: Key challenges Identified: Safer Road Users

PILLAR 5: Post-crash Response

According to the UNDA framework, the post-crash response pillar is aimed at increasing responsiveness to post-crash emergencies and improving the ability of healthcare and other systems to provide appropriate emergency treatment and longer-term rehabilitation for crash victims.[23]

The research shows that many of the challenges identified are not unique to South Africa. Multiple sources[24]also identify the challenge in easily accessing post-crash care and existing barriers to primary and emergency healthcare. Very little of these research sources are specific to the South African context or to road crashes and related trauma emergency reinforcing the existing gaps in data management systems. Hence, international case studies[25] on middle-income African countries such as Nigeria and Kenya, among others, were consulted. However, inferences can be made in relation to South Africa and about concerns relating to the lack of professional healthcare staff levels, disparity between urban and rural healthcare facilities and the services available at these institutions, resource limitations (including the number and availability of emergency vehicles) which applies equally to the provision of primary healthcare as it does to emergency healthcare.

[23]Global plan for Decade of action for road safety 2011-2020
[24] Global Health Action (2016). Vol 9
[25]African Health Sciences Journal June (2009) 9(2)

The shortage of professional medical staff, particularly in the public sector is a serious challenge, the impact of which is felt in the case of emergency and post-crash healthcare. According to the South African Medical Journal[26]:

> "South Africa compares unfavourably with other middle-income countries in terms of medical and dental professionals per 1 000 population. In 2008, South Africa had 0.77 physicians (medical professionals) per 1 000 population compared to Brazil (1.85), Mexico (1.8), the UK (2.47) and Australia (2.3). The UK has 120 000 doctors for a population of 60 million; South Africa, with a population of 48 million, has 27 000 doctors."

There are multiple emergency call-centre numbers promoted in South Africa through various entities e.g. government departments, hospitals, insurance companies, network service providers etc. This poses a significant challenge as the process to access healthcare services in an emergency becomes unnecessarily complex when the purpose should be to provide simplified, immediate and effective post-crash response.

The costs of healthcare in South Africa is referred to under the economic and financial impact section of this document and clearly highlights the financial and budgetary limits relating to the provision of healthcare and emergency healthcare in particular. Consultation and discussion with stakeholders at the Road Safety Summit 2015 confirmed these challenges relating to funding and resources in the South African healthcare environment.

[26]South African Medical Journal August 2011 Vol 101 No 9

The Road Accident Fund (RAF) is the only social insurance fund available to the public which compensates crash incident victims. The scarcity of such resources makes it particularly important for public awareness around the issue and the entity. It is for this reason that the RAF actively promotes its services at hospitals and within local communities. These interventions must however be strengthened to enhance accessibility and expand its reach in order for road crash victims to realise their due benefit within reasonable timelines.

Summary of challenges under Pillar 5:
Barriers to access and quality of treatment (incl. equipment, training of staff and specialised medical treatments)
Inconsistent responsiveness of emergency medical personnel
Inadequate funding for medical treatment, rehabilitation and loss
Fragmented approach to dealing with post-crash response within the medical fraternity
Limited monitoring of progress of interventions completed or currently underway to address this pillar
Oversight and control in coordinating actions to improve post-crash response
No single nationwide telephone number for emergencies
Low adoption rate for new technologies to increase efficiency and responsiveness levels

Table 12: Key challenges Identified: Post Crash Response

4.4. Economic and financial impact

The situational assessment of road safety requires an understanding of the economic and financial impact of road death and injury. The 'total cost of RTCs' metric is an important road safety indicator that serves as the departure point for understanding the extent and magnitude of the road safety problem in a country. On a national level, reported as a percentage of the Gross Domestic Product (GDP), the RTC cost estimation relates to the consequences RTCs have on the economy and social welfare of a country. It is part of country profile statistics, reported annually, providing a ranking scale of the comparative road safety performances of countries.

Knowing the cost of RTCs on a national level serves to internalise the road safety scourge and to encourage role-players to take ownership of the problem that needs to be vigorously managed. This is necessary to understand the consequences for the economy as well as to understand that resources applied to dealing with road death and injury could be applied elsewhere as these costs are largely avoidable. The opportunity cost of road death and injury is that it could easily pay for free higher education, or it could be used by the DTI as incentive funds to stimulate the economy, or for any other national treasury requirement that could yield a far greater return to South African society.

RTC cost estimation comprises three main cost categories, viz., human casualty costs, vehicle repair costs and incident costs. Understanding the cost elements of these cost categories facilitates informed decision-making for designing and implementing appropriate actions and interventions aimed at reducing RTCs and their impacts. The main reference for estimating RTC costs in South Africa had been the report "The estimation of unit costs of road traffic accidents in South Africa", prepared by the Council for Scientific and Industrial Research Council (CSIR) and published by the Department of Transport in 2004 - hereinafter referred to as "Cost of Crashes 2004" (CoC 2004). The CoC 2004

methodology produced a variety of unit cost tables, useful for benefit/cost evaluation of road safety programmes and projects targeting of specific types of RTCs and victim groups, but did not adequately address the social and environmental cost elements and the methodology was generally viewed as cumbersome to apply. With the lapse of a decade, the Road Traffic Management Corporation (RTMC) commissioned the evaluation and review of CoC 2004. The overarching objective of the project was to develop a more user-friendly methodology that would more appropriately account for the local realities of the social and indirect cost of RTCs in the South African context. It also aimed to be in line with the 'Safe System' approach which is the basis for the five pillars of the United Nations Decade of Action for Road Safety 2011-2020 (DoA) as well as of the National Road Safety Strategy 2016-2020 (NRSS).

The first phase of the project updated the RTC unit cost tables of CoC 2004 using the RTMC's 2015 fatal RTC dataset and other appropriate cost elements relating to human casualty, vehicle repair and incident related costs. Where no new or updateable data were available, CoC 2004 data were updated using appropriate consumer price indices. The methodology was benchmarked against international practices to determine relevancy and completeness. Potential additional variables were identified to be included in the second phase which focused on the development of a 2016 methodology with 2015 as the base year (referred to as CoC 2016). International trends and best practices for calculating the social cost of RTCs were reviewed, and in some cases the results from credible studies were used as surrogate input values in the calculations model.

In 2015, a total of 12 944 fatalities in 10 613 fatal RTCs were recorded by the RTMC. Currently, only fatal RTCs and fatalities are recorded annually and therefore the other RTCs and RTIs were estimated from historical data. Under-reporting of RTCs is a worldwide problem that varies substantially among countries. A meta-analysis of 49 studies in 13 countries (European Road Safety Observatory, 2009) found that the mean reporting level according to the 30-day rule was 95 per cent for deaths.
The number of deaths and fatal RTCs were thus increased by 5 per cent to account for under-reporting. The figures used in this study are indicated below.

Number of RTCs and RTIs for 2015, adjusted for underreporting					
	Fatal	Major	Minor	Damage only	Total
Number of RTCs	11 144	40 117	132 609	648 560	832 431
	Death	Serious	Slight	No injury	Total
Number of persons	13 591	62 520	202 509	1 429 794	1 708 414

The total cost of RTCs on South Africa's road network for 2015 amounted to an estimated R142.95 billion - equating 3.4 per cent of GDP. The breakdown of the total cost of RTCs by cost element and by severity is provided in the table below:

Cost Category	Total Cost of RTCs (R million)

	Fatal	Major	Minor	Damage only	Total	%
Human Casualty Costs	58 332	24 794	14 546	1 358	99 030	69.3
Vehicle Repair Costs	218	809	2 902	17 395	21 326	14.9
Incident Costs	2 018	5 113	2 740	12 723	22 595	15.8
Total Cost	**60 569**	**30 716**	**20 189**	**31 477**	**142 951**	

Although it is difficult to directly benchmark South Africa's performance against other countries as costing methodologies differ from country to country, it is clear that South Africa is not performing favourably. The average cost of RTCs in comparable low- and middle-income countries is 2.2 per cent of their GDP while the average for high-income countries is 2.6 per cent of their GDP (varying between 1.0 and 4.6 per cent).

The following table summarises the unit cost per RTC and the unit cost per person by RTC and RTI severity respectively. These unit costs are commonly used in economic evaluation of road safety interventions.

Unit Cost per RTC (Rand)				
Fatal	Major	Minor	Damage only	Any severity
5 435 261	765 664	152 244	48 533	171 727
Unit Cost per RTI (Rand)				
Death	Death	Death	Death	Death
3 916 187	3 916 187	3 916 187	3 916 187	3 916 187

Further development of a RTC costing methodology would ideally be based on consistent and reliable RTC data on a national level. In the absence of this, strategies will have to be developed to simulate RTC statistics (as was the case to a large extent with CoC 2016) as part of a future strategy. The reporting and recording of RTCs need to be pursued with austerity as under-reporting continues to be a problematic element of RTC costing. Currently, it is uncertain what the level of under-reporting of RTCs in South Africa is.

The CoC 2016 calculations model contains metrics that need to be updated on a recurring annual basis as the availability and accessibility of RTC cost data more relevant to the South African context improve. Much of this will not necessarily be realised through top down demands on stakeholders for data, but through transformation to a road safety 'results focus'27 paradigm with self-manifested shared responsibility across sectors. This paradigm shift is likely to be solely dependent on credible road safety governance and convincing leadership.

[27] To achieve road safety 'results focus' is the overarching institutional management function of the RTSMS framework (Bliss and Breen, 2009, SANS/ISO 39001).

The total 2015 cost figure derived from the CoC 2016 study for South Africa (R 143 billion) should be the point of departure for the systematic change of the road traffic safety management system (RTSMS) to become 'results focus'. This includes informing policy and strategy development, facilitating improved coordination among stakeholders and allocating funds and other resources aimed at effectively curbing the road traffic safety problem. CoC 2016 provides evidence regarding the extent and magnitude of road traffic crashes that enable local and provincial authorities to mobilise road safety action plans that could potentially be included in Integrated Development or Transport Plans. By contextualising these costs, improved predictions can be made, targets set and monitored. In addition, the CoC 2016 results should be used to prioritise specific research and development programmes aimed at reducing specific crash costs. This will assist in ensuring that the implementation of the NRSS is efficient and effective.

The CoC 2016 results provide an improved picture of the road safety burden carried by each stakeholder and should be used to delineate road safety roles and responsibilities across sectors as stakeholders can now be held accountable for road safety actions within their domain. Stakeholders can measure progress towards reducing the impact that crashes have on specific sectors. Understanding this cost according to different sectors and domains assist in coordinating different stakeholders and to establish partnerships according to which resources can be allocated appropriately for maximum effectiveness. The acceptance of this monetisation of RTC costs as a measure of the real burden on the socio-economic development of the country should go hand-in-hand with accepting accountabilities and responsibilities for taking actions with an emphasis on the need to focus on the achievement of road safety results through effective implementation of the 'Safe System' underpinned by the RTSMS framework.

4.5. Emerging strategic themes

Through evaluation of the underlying reasons for challenges, strategic themes emerged for each pillar. It was found that road safety management (Pillar 1) themes are common problems across other pillars as well. Addressing these strategic themes broadly address the South African challenges and will support the country's objective to achieve a 50% reduction in road fatalities by 2030. These themes are identified below:

	Key strategic themes			
PILLAR 1: Road safety management	**PILLAR 2: Safer roads and mobility**	**PILLAR 3: Safer vehicles**	**PILLAR 4: Safer road users**	**PILLAR 5: Post-crash response**
	Identify and address high risk locations (increase safety assessments)	Increase vehicle safety standards	Improve road user behaviour& involve communities in road safety (education &awareness)	Increase effectiveness of first responses
	Create a self-explaining and forgiving road environment for all road users	Ensure vehicles on the road network are roadworthy	Improve enforcement effectiveness	Simplify access to post-crash care
	Regular road audits on new projects		Increase protection for VRU's	
	Improve coordination and management			
	Improve road safety data systems			
	Eliminate fraud and corruption			
	Ensure adequate funding and capacity			
	Enhance use of technology to protect road users			

Table 13: Strategic Themes

5. Strategy 2016 to 2030 – A Vision for Safer Roads

5.1. Perspective

The NRSS was drafted using various perspectives such as infrastructure, road users, management, and crash incidents amongst others. Considering that Road Safety is a complex and multi-faceted concept and function, it is important to acknowledge that at the centre of it all are ***people***. It is for this reason that the perspective underpinning the strategy is change behaviour within the social environment. It is envisioned that the result thereof will be a marked improvement in road user behaviour, increased awareness of road safety and greater responsibility for road safety by all road users in the South African society. Furthermore, the strategy also focuses on better provision of facilities for all road users (vehicles, vehicle occupants and pedestrians) and an improved and synergised interface between all users and components of the road networks.

A recurring theme that emerged throughout the analysis and assessment phases of the strategy development process was that Road Safety is everyone's responsibility, individually and collectively. What is required is a strategic drive to shift the national psyche towards understanding the importance and impact of road safety and its context, as well as to develop active and responsible citizenry as part of a developmental government agenda. In order to bring about the required change or shift the current road safety trends towards the desired state where road safety is a national priority and the number of fatal crashes and fatalities are significantly reduced, several areas need to be addressed simultaneously. This is highlighted by the strategic themes that emerge in the strategy which identify focus areas for intervention.

Furthermore, considering that South Africa is a developing country, rich in history that has shaped peoples' movement, mobility and transport choices, the manner in which road users interface with the road network is at times not a personal choice or behavioural issue, but is to an extent determined by their context or physical environment. The strategy is therefore not only dealing with infrastructure, vehicles and driver behaviour, but is in effect encouraging a paradigm shift in the overarching approach to road safety. Development and social change should occur through user-centric interventions, design-for-use infrastructure, active citizenry, collective responsibility and good governance. All of these elements need to act in synergy to bring about safer roads with the ultimate aim of reducing crashes and related fatalities.

5.2. The strategic framework

In order to address the challenges identified relating to road safety within South Africa, the following strategic framework has been used. This framework outlines the strategic intent together with an outcomes-based implementation roadmap required to reduce the number of crashes, particularly fatal crashes, and the related number of fatalities within the country.

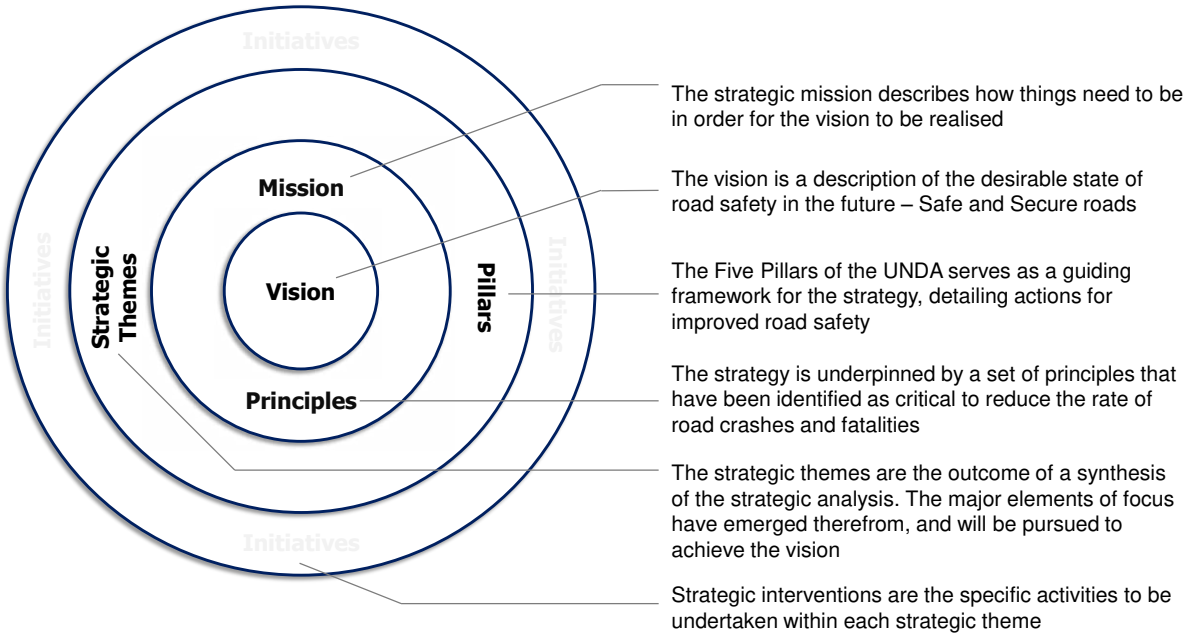


Figure 9: Strategic Framework

At the centre of the strategic framework is the country's vision for road safety, defined as *Safe and Secure Roads*. The mission focuses on the reduction of crashes and fatalities, the promotion of road usage and working towards ensuring an acceptable level of quality in road traffic management. In addition to the mission, the second layer of the framework is made up of, a set of key principles that underpin the strategy. These principles are reflected within the next strategic layer in alignment with the five pillars of the UNDA as well as the strategic themes.

The five pillars are acknowledged as a comprehensive categorisation of the high-level activities required to achieve the mission statement, reach targets set and address challenges identified in Section 4. Through evaluation of the underlying reasons for the challenges, strategic themes emerged per pillar. Addressing these themes effectively would support South Africa to achieve the desired state of road safety. To aid and focus the actions required to address the strategic themes and achieve the strategic targets, objectives and key performance indicators to measure the impact of the interventions are linked to the specific themes for each pillar. This is followed by a list of interventions, prioritised according to potential impact and ease of implementation. The outermost layer of the framework addresses the specific interventions per pillar. Responsibility has been assigned to a lead agency for the overall management of the implementation at the intervention level.

5.3. Principles

The strategy is underpinned by a set of principles that have been identified as critical to reduce the rate of road crashes and fatalities on South African roads. Whilst the list is not exhaustive, the core principles defining the strategy are:

a. **Role of government through its various departments and agencies** – The strategy is based on the notion that road safety is everyone's responsibility. However, it recognises that the DoT must take the lead in an effort to make roads safe and secure.

b. **Horizontal integration** – The strategy takes into account the reality that the activities and programmes of other areas of government, such as cooperative governance, education, health, human settlements, justice, rural development and land reform, social development as well as the police, directly or indirectly have a bearing on the level of safety on our roads.

c. **Inter-sphere coordination** – In terms of the Constitution of the Republic of South Africa, road safety is a shared concurrent function, involving national, provincial and local governments. Inter-governmental and inter-sphere cooperation are therefore the corner-stones of a successful road safety strategy.

d. **Stake-holder participation** – Participative democracy requires that the views of the general public and other stakeholders be solicited both during development of the strategy and during implementation thereof.

e. **Planning and resourcing** – A successful strategy depends on proper organisation and planning as well as adequate allocation of resources.

f. **Compliance and enforcement** – This is a two-pronged strategy which seeks first to promote compliance with existing policy and legislation. However, law enforcement will be improved to address road users who fail to adhere to legislation.

g. **Realistic targets** – The NRSS aims to set forth a target that is both ambitious yet feasible. Based on historic information of reduction in crashes and fatalities in South Africa, as well as the assessment of the current state of road safety management, the strategy is focussed on reducing fatalities by 50% from the 2010 baseline, by 2030.

h. **The UNDA Five Pillars and Safe Systems Approach** – The UNDA Five Pillars and the Safe Systems Approach embodied therein, are applied as a guiding framework to the strategy and form the basis for analysis.

i. **Accountability** – Limited success of previous road safety strategies is largely due to a lack of effective execution and implementation. To ensure that this is not the case moving forward, it is imperative that roles and responsibilities of stakeholders tasked with delivery of the strategy are clearly defined, assigned, communicated and understood.

5.4. Vision and Mission

South Africa's vision for road safety defines a state wherein the safety and security of people's lives are not compromised by them entering the road network system. The vision and accompanying mission statement for the NRSS is illustrated in Figure 10 below:

Figure 10: Strategic Vision and Mission

5.5. Goal and targets

Strategic goal:

Continually reduce the occurrence and severity of road crashes and consequently the level of fatalities and injuries in an efficient, integrated and coordinated manner

Strategic target:

Achieving the mission to reduce number of fatal crashes identified in the mission statement will require efforts to be directed toward achieving the targets set out in the primary guiding policy documents of this strategy as an important first step. In light of the targets set out in these documents, the primary strategic target of this strategy is to:

- ***Reduce fatalities by 50% from the 2010 baseline***

A reduction in serious injuries of equal amount would also be considered a strategic target, however current data limitations make measuring this progress difficult. Improving and addressing information shortcomings such as collecting data on road crash injuries has therefore also been identified as a strategic theme of this strategy. The vision for road safety, as well as the targets set out, requires a drastic change in the status quo. This section outlines this new path proposed for the country to embark on in order to achieve its vision and targets. The table 14 below shows the annual targets for the NRSS for the target of a 50% reduction to be met by in line with the 3 scenarios.

Year	Number of Fatalities if the reduction rate is 4% (Realistic)	Number of Fatalities if the reduction rate is 1.49% (Conservative)	Number of Fatalities if the reduction rate is 6.7% as per the Decade of Action for Road Safety (Ideal)
2007	14 920	14 920	14 920
2008	13 875	13 875	13 875
2009	13 768	13 768	13 768
2010	13 967	13 967	13 967
2011	13 954	13 954	13 032
2012	13 528	13 528	12 159
2013	11 844	11 844	11 345
2014	12 702	12 702	10 585
2015	12 944	12 944	9 876
2016	12 426	12 752	9 215
2017	11 929	12 562	8 598
2018	11 452	12 375	8 022
2019	10 994	12 191	7 485
2020	10 554	12 010	6 984
2021	10 132	11 832	6 516
2022	9 727	11 656	6 079
2023	9 338	11 483	5 672
2024	8 964	11 312	5 293
2025	8 606	11 144	4 938
2026	8 261	10 978	4 607
2027	7 931	10 815	4 299
2028	7 614	10 654	4 011

2029	7 309	10 496	3 742
2030	7 017	10 340	3 492

Table 14: Annual Targets based on the 3 scenarios

5.6. Prioritisation and strategy plan

The road safety challenges within South Africa were identified in the context of the UNDA Pillars. This process has highlighted the complexity and cross-cutting nature of the challenges and the responses required to address them. In order to achieve significant reductions in road injuries and fatalities; and manage road safety more effectively, the strategic themes, as listed in Table 13, need be addressed in a collective and integrated manner. Note that each strategic theme is to be addressed through multiple interventions that are outlined in the following sections but first the prioritisation and phasing of interventions are to be discussed below.

Prioritisation

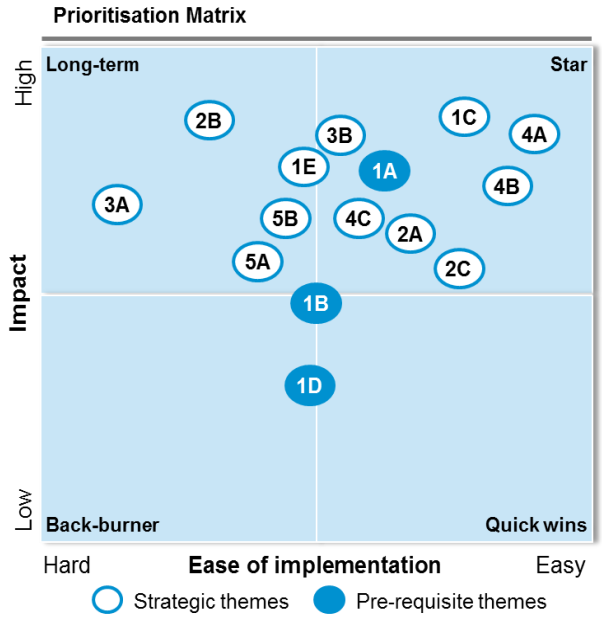
Effective execution requires having a clear focus and thoughtful sequencing of interventions. This is necessitated by the resource constrained context in which road safety is promoted in the country. As a developing economy, South Africa's fiscal and human resources are limited. There is also a great need for existing resources to be directed toward activities which directly facilitate economic growth and development e.g. funding industrialisation. Improving the safety of South African roads is therefore a task of achieving much with very little.

A prioritisation matrix assists in determining the relative importance and supports the planning of the interventions. Themed interventions are comparatively assessed based on ease of implementation as well as expected impact on the set targets. The prioritisation of the strategic themes, as listed in Table 13, is depicted below. Themes appearing closer to the top right corner are themes that need to be addressed as soon possible as these deliver higher relative impact and are easier to implement. Primary focus strategic themes from all areas relate to changing human behaviour as this is one of biggest factors in road crashes:

- Improving road user behaviour and involving communities in road safety. This is a two-pronged initiative that involves both education and awareness to address user behaviour.
- Improve enforcement effectiveness. This theme aims to address user behaviour by improving and increasing enforcement of road laws.
- Eliminate fraud and corruption. As with the enforcement theme, reduction in fraud and corruption would increase effective enforcement and discourage poor road user behaviour.

Figure 11 below also identifies pre-requisite themes. These themes aim to create an enabling environment for the implementation of all other interventions and are therefore also planned for execution in the short-term. These pre-requisite strategic themes are:

- Improving coordination and management;
- Improving road safety data systems; and
- Ensuring adequate funding and capacity.



Pillar	Strategic theme	ID
Pillar 1: Road safety management	Improve coordination and management	1A
	Improve road safety data systems	1B
	Eliminate fraud and corruption	1C
	Ensure adequate funding and capacity	1D
	Enhance use of technology to protect road users	1E
Pillar 2: Safer roads and mobility	Address high risk locations (safety assessments)	2A
	Provide a self-explaining and forgiving road environment for all road users	2B
	Regular road audits on new projects	2C
Pillar 3: Safer vehicles	Increase vehicle safety standards	3A
	Ensure vehicle on road network are roadworthy	3B
Pillar 4: Safer road users	Improve road user behaviour & involve communities in road safety	4A
	Improve enforcement effectiveness	4B
	Increased protection for VRU's	4C
Pillar 5: Post-crash response	Increase effectiveness of first responses	5A
	Simplify access to post-crash care	5B

Figure 11: Prioritisation Matrix

Strategic plan

Based on the above prioritisation methodology, the interventions and associated strategic themes have been sequenced in the short, medium and long-term for implementation illustrated in Figure 12 below.

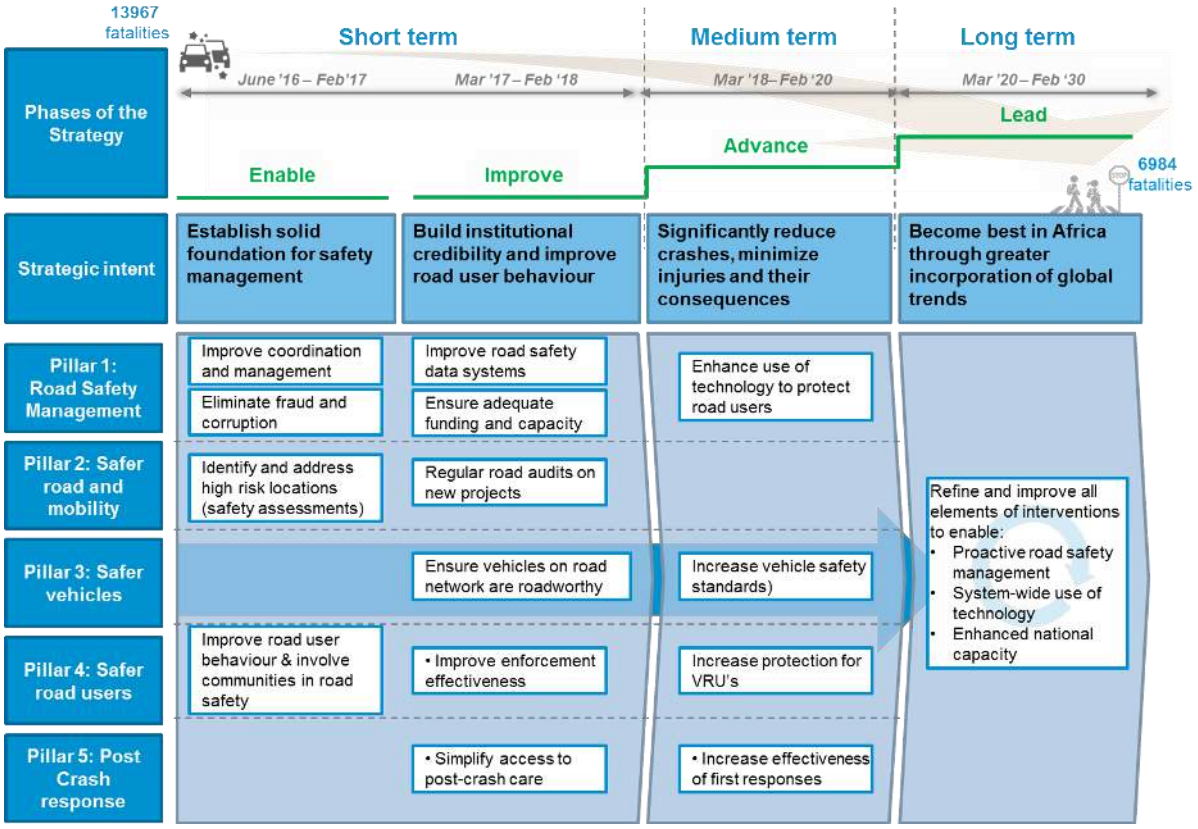


Figure 12: Phasing of interventions by theme

5.7. Strategy objectives and key performance indicators

Guided by the challenge analysis, themed interventions have been identified to define the new direction for road safety. Proposed interventions were informed by best practice insights and a fundamental adherence to the principles outlined in this document with the aim of addressing the challenges and strategic themes identified. By addressing challenges in this way, this strategy aims to meet the strategic targets, vision and strategic goals. An important aspect of any strategy is the ability to monitor progress, and this will be done through performance indicators identified per objective.

PILLAR 1: Road Safety Management

Strategic theme	Objectives	KPIs
Improve coordination and management	Strengthen cooperation between government departments and clarify existing overlaps in responsibility	• Establishment of inter-departmental National Roads Safety Council (NRSC) with fixed scheduled meetings by 2017 • Adherence to defined meeting schedule • Measure number of interventions implemented • Annual release of reports on all interventions' performance
	Ensure implementation of road safety initiatives such as ISO 39 001	• Development and publication of ISO39001 Sector Specific Implementation Manuals; • Number of Industries (sectors) participating; • SANAS approved Accreditation scheme for ISO39001 Certification Bodies; • Approved Auditor Scheme for ISO39001 Auditors • No of Marketing / Promotional and awareness workshops; • No of ISO39001 Youth / Road Safety Ambassadors Trained
	Strengthen public private partnerships to advance safety standards and clarify existing overlaps in responsibility	• Number of public/private engagements relating to Road Safety • Number of public/private formal partnerships entered into related to Road Safety
	Ensure that legislation and regulations support the successful execution of this strategy	• Review and assess all relevant legislation by 2018 • Development of response plan for legislative changes completed by 2019 if applicable
Ensure adequate funding and capacity	Ensure adequate funding and resourcing for road safety interventions	• Establish road safety budget to deliver NRSS by 2017 • Number of partnerships identified to resource the implementation of the strategy
	Ensure that all road safety practitioners are adequately skilled and that responsible entities have sufficient capacity	• Determine resource and capacity baseline by 2017 • Develop and implement industry professionalisation framework by 2018 • Number and type of training interventions • Percentage of posts filled
Eliminate fraud and corruption	Eliminate incidences of fraud and corruption through improved anti-corruption processes and enforcement	• Development of national anti-fraud policy for implementation by all entities in all regions by 2018 • Number of anti-corruption training interventions rolled out to government officials and members of the public • Number of officials trained on anti-corruption • Number of members of the public trained on anti-corruption • Number of incidents of fraud and corruption reported, charges investigated, prosecuted successfully • Number of new systems and processes introduced to address fraud and corruption.
Improve road safety data systems	Integrate data management systems for road safety to strengthen reporting structures and ensure monitoring and evaluation	• Establishment of an improved single centralised national data management system by 2018 to integrate and share information between all spheres of government • Number of annual data audit processes completed • Number of interventions undertaken and progress thereof • Annual publication of the progress of interventions undertaken
	Ensure that all road safety interventions and practices are based on appropriate analysis/theory of change and are also regularly monitored and evaluated	
Enhance the use of technology	Identification and implementation of technology to improve road safety	• Number of technologies interventions in stages of implementation (identified, in review, testing, procurement, piloting and implemented

Table 15: Objectives and performance indicators for road safety manageme

PILLAR 2: Safer Roads and Mobility

Strategic theme	Objective	Key performance indicators
Identify and address high risk locations (safety assessments) & regular road audits on new projects	Improve spatial development planning and ensure regular assessment of roads in hazardous/high risk locations to address road safety.**Error! Bookmark not defined.**	• Number of hazardous locations identified; • Number of road safety incidents at identified hazardous locations; • Review the 1999 Road Safety Manual and include guidelines on spatial planning to improve road safety and measures to eliminate hazardous locations
Provide a self-explaining and forgiving road environment for all road users	To improve the standards of road design to ensure that all road users are given adequate protection and information - focus on VRUs	• Review legal requirements for execution of road safety audits and monitor adherence; • Number of crashes involving VRU, including number of fatalities, number and level of injuries and reasons for crash • Review design standards to ensure the mainstreaming of the needs of VRU's, especially pedestrians
	To ensure that road design is forgiving, thus allowing motorists to recover from error, or to survive an impact when a crash is inevitable.	
	To support improved access to public transport in order to reduce number of VRU's on major roads.	• Number of passengers utilising the public transport system • Costs associated with public transport

Table 16: Objectives and performance indicators for safer roads and mobility

PILLAR 3: Safer Vehicles

Strategic theme	Objective	Key Performance Indicator
Ensure vehicles on road network are roadworthy	Strengthen roadworthiness mechanisms to ensure safety of vehicles on the country's roads and compliance to vehicle safety standards**Error! Bookmark not defined.**	• Number of non-roadworthy vehicles on road • Number of roadworthiness tests completed • Establish vehicle safety standards by 2018 • Assess gaps in road worthiness mechanisms by 2019 • Number of road worthiness testing processes updated/changed/added
Increase vehicle safety standards	Promote the fitment of protective vehicle technologies including, amongst others, seatbelts, airbags and driver support warning devices.	• Number of targeted engagements with industry • Number of instances of application of safety technologies
	Advance the safety standards of public transport vehicles, (including bakkies and trucks) and drivers, in order to protect passengers and other road users.	• Establish safety requirement baseline by 2018 • Number of new safety standards introduced 2018 • Number of crashes involving injuries to vehicle occupants

Table 17: Objectives and performance indicators for safer vehicles

PILLAR 4: Safer Road Users

Strategic theme	Objective	Key performance indicators
Improve enforcement effectiveness	Strengthen law enforcement efforts and systems	• Number of traffic violations occurred • Statistics on status of fines (number of paid/not paid/followed up/prosecuted fines (RTIA data)) • Development of intelligence-led enforcement campaigns for national implementation • Increased visibility of traffic police, 24/7 (measured by surveys) • Successful implementation of AARTO • Implement systems to identify repeat offenders by 2018
Improve road user behaviour & involve communities in road safety **and** **Increased protection for VRU's**	Educate people about the dangers of irresponsible road usage and road users of the need to be responsible	• Number of educational/road safety awareness campaigns initiated • Incorporation of specific road safety content in basic education curriculum by 2017 • Improved road safety knowledge of South Africans year-on-year (measured through surveys)
	Improve skills and abilities of drivers	• Regulate driving schools by 2019 • Implement alternative licencing process by 2020 • Introduction of driver re-testing by 2022 • Number of drivers re-tested periodically
	Involve citizens in debates around road safety, and in leading road safety campaigns and interventions	• Number of VRU crash statistics: cyclists; motor passengers, , pedestrians etc. • Number of programmes, activities to promote community discussion and involvement in road safety at school and community levels • Number of learners and community members engaged in road safety programmes • Number of incentives developed for good driving/road user behaviour • Development of bi-annual conference for youth on road safety • Number of youth role models included in Road Safety Ambassador programme
	Increase public engagement around road safety	
	Intensify efforts to deal with distractive and destructive driving behaviour	• Number of crashes occurred due to internal driving distractions • Number of crashes occurred due to external driving distractions • Number of crashes occurred due to driving under alcohol and/or drug influence
	Intensify efforts to deal with speeding and determine appropriate speed limits	• Number of crashes occurring due to speeding • Number of speeding tickets issued • Measure of average speeds as well as in vehicles exceeding the speed limit (existing nationwide continuous traffic observation (CTO) data can be employed) • Number of instances that speed limits have been changed

Table 18: Objectives and performance indicators for safer road users

PILLAR 5: Post-crash Response

Strategic themes	Objective	Key performance indicators
Simplify access to post-crash care	Simplify and improve education for the access to post-crash response services (incl. RAF)	• Implementation of a single, national emergency response number by 2018 • Number of calls received per respective emergency number • Number of response requests per communication type • Number of inquiries to RAF • Number of successful vs. non-successful claims to RAF
Increase effectiveness of first responses	Address inconsistencies and improve quality and responsiveness of treatment (including training and resources)	• Average response time per area • Comparison of survival rates of victims per area • Complete annual audits of skills and equipment per area • Implement RABS by 2020
	Address shortage of funding for medical treatment, rehabilitation and loss	• Average value of funding allocated per victim • Average cost of treatment, rehabilitation and loss
	Strengthen coordination and management of post-crash response resources and information of various stakeholders	• Number of post-crash response command centres • Number of reporting lines • Number of different resources allocated per respective service supplier (Government agencies, public entities) per area • Number of post-crash response requests per area

Table 19: Objectives and performance indicators for post-crash care

5.8. Strategic interventions per pillar

This section provides a list of interventions per pillar, grouped by strategic theme with allocations to the lead agency(s) assigned to manage overall responsibility for the implementation of the intervention.

PILLAR 1: Road Safety Management

Theme	Intervention	ID	Period	Lead agency
Improve coordination and management	• Establish a National Road Safety Oversight Council for governance and oversight of the strategy	1A(i)	Short	DOT
	• Continue to support improvement measures to address the problem areas within road safety e.g. freight transport as they relate to road safety management efforts on national and provincial roads. E.g. roadworthiness, overloading, driver fatigue, etc.	1A(ii)	Short	DOT
	• Establish an annual conference on Road Safety to enhance evidence-based solutions	1A(iii)	Short	RTMC
	• Support and influence the development of guidance for liquor licencing to include road safety considerations	1A(iv)	Short	DTI
	• Monitor and improve compliance by road authorities to strategy targets	1A(v)	Medium	DOT
	• Continuous improvement of co-ordination between private and public health services to improve post-crash response rates across all areas	1A(vi)	Medium	RAF
Ensure adequate funding and capacity	• National road safety budget to be approved by Treasury	1B(i)	Short	DOT
	• Develop and roll out (standardised, modernised and improved) training packages for traffic officers and other road safety practitioners to increase education standards and level of professionalism	1B(ii)	Short	RTMC
	• Complete a full resource and capacity assessment to determine a baseline to deliver the NRSS	1B(iii)	Short	DOT
	• Find alternative sources of funding for road safety interventions (consider both public and private sector)	1B(iv)	Long	RTMC
Eliminate fraud and corruption	• Support the development of the new anti-corruption strategy followed by marketing and communications plan including drafting norms and standards for the corruption strategy.	1C(i)	Short	RTMC
	• Standardise and improve employment conditions for road safety professionals	1C(ii)	Short	RTMC
	• Identify and address opportunities for fraud and corruption in e-NaTIS vehicle licensing	1C(iii)	Short	RTMC
Improve road safety data systems	• Develop a new crash reporting framework for improving the collection and accuracy of data, and development of new forms	1D(i)	Short	RTMC
	• Publication of annual statistics to be achieved within 6 months of the following year	1D(ii)	Short	RTMC
	• Commission research into situational conditions of crashes (time of day, weather, other vehicles present/involved), which should feed into road safety guidelines.	1D(iii)	Short	RTMC
	• Strengthen programme to share data across the private and public sector; including short-term insurance industry to discuss the effective use of this data to introduce new services and products jointly between the private and public sector	1D(iv)	Medium	RTMC
	• Identify availability and potential integration of other crash data sources	1D(v)	Medium	RTMC
Enhance the use of technology	• Technology review, procurement and training	1E(i)	Long	
	• Legislate use of tachograph for all freight and public transport vehicles	1E(ii)	Medium	DOT
	• Implement system for utilisation of technology to build a road safety knowledge management system; using information such as Geographical information systems, Geolocation, etc.	1E(iii)	Long	SANRAL
Implementation of Standards as a tool to support the implementation of the Decade of	• Promotion, marketing and awareness initiatives towards implementation of the Road Traffic Safety Management Systems (ISO39001), both within Government and Industry.			
	• Partnering with SANAS and SABS and other industry partners to put in place measures to ensure that the requirements for Certification Bodies and accreditation of the Standards Auditors are adequately addressed.			

Table 20: Actions for road safety management

PILLAR 2: Safer Roads and Mobility

Theme	Intervention	ID	Period	Lead agency
Identify and address high risk locations (safety assessments)	• Continuously identify hazardous/high risk road locations and remedy with focused interventions	2A(i)	Short	SANRAL
	• Identify top VRU hazardous/high risk locations on a continuous basis and address them.	2A(ii)	Short	SANRAL
	• Reduce speed limits at high risk locations	2A(iii)	Short	DOT
	• Each local authority to identify and address at least one high risk pedestrian location annually	2A(iv)	Short	LOCAL AUTHORITY
	• Review speed limits across the road network in line with road conditions and environment	2A(v)	Medium	DOT
Provide a self-explaining and forgiving road environment for all road users	• Improve the forgiving nature of roadside design.	2B(i)	Short	SANRAL
	• Employ adequately experienced and qualified staff to support up-skilling and training of staff	2B(ii)	Short	LOCAL AUTHORITIES
	• Ensure application of road signage and road markings standards are effectively applied.	2B(iii)	Short	LOCAL AUTHORITIES
	• Conduct research into addressing safety of hawkers and other pedestrians at the roadside	2B(iv)	Short	RTMC
	• Develop and implement a road improvement and maintenance prioritisation model (with focus to rural roads based on information driven strategic data	2B(v)	Medium	SANRAL
	• Improve standards for road design by focusing on layout format and physical design to ensure all road users are optimally protected	2B(vi)	Medium	SANRAL
	• Identify locations and improve road design for crash access for emergency vehicles	2B(vii)	Long	SANRAL
	• Integrate road safety into bus and rail transport services	2B(viii)	Long	DOT
Regular road safety audits on new projects	• Legislate and roll out road safety audits for all new roads, and road safety assessments for existing high-crash roads in the medium–term	2C(i)	Short	DOT
	• National audit of visibility at high risk pedestrian locations	2C(ii)	Short	SANRAL

Table 21: Actions for safer roads and mobility

PILLAR 3: Safer Vehicles

Theme	Intervention	ID	Period	Lead agency
Ensure vehicles on road network are roadworthy	• Immediately increase traffic enforcement around vehicle roadworthiness	3A(i)	Short	RTMC
	• Improved surveillance of vehicle testing stations to combat corruption and ensure that vehicle testing is robust	3A(ii)	Short	RTMC
	• Implement periodic roadworthy testing programme for all vehicles as well as specifying incremental checks for public transport vehicles	3A(iii)	Medium	RTMC
	• Improve the roadworthiness of the Public Transport vehicle fleet	3A(iv)	Medium	RTMC
Increase vehicle safety standards	• Enhance visibility of vehicles through "Lights-On" programme	3B(i)	Short	RTMC
	• Research new technologies in vehicle testing, and set standards to internationally acceptable levels including the use of latest technology (e.g. dash-cameras, tachometers)	3B(iv)	Medium	RTMC

Table 22: Actions for safer vehicles

PILLAR 4: Safer Road Users

Theme	Intervention	ID	Period	Lead agency
Improve road user behaviour – Awareness/ involvement	• Incorporate road safety education and awareness campaigns directly under the coordination of the RTMC.	4A(i)	Short	RTMC
	• Coordination of public awareness campaigns – Develop and rollout public education campaigns (Focus on speed, seatbelt use and drunk/drug-driving, distracted driving behaviour).	4A(ii)	Short	RTMC
	• Rollout a responsive campaign empowering public transport passengers and other road users to report poor and/or dangerous driving ('Speak out' campaign).	4A(iii)	Short	RTMC
	• Develop and rollout programme of community-based engagements around road safety awareness projects.	4A(iv)	Short	RTMC
	• Devise focused persuasive road safety behaviour change campaigns targeting all road users.	4A(v)	Short	RTMC
	• Conduct research into new opportunities for youth, women and people with disabilities in road safety and create opportunities for them to pursue careers in road safety.	4A(vi)	Short	RTMC
	• Involve citizens especially the youth in leading safer road user behaviour (Introduce Road Safety Badge System – at local organisation and community development level e.g. scout clubs, youth clubs, school badges etc.).	4A(vii)	Medium	RTMC
	• Explore and implement sports and popular-culture based road safety interventions.	4A(viii)	Medium	RTMC
	• Conduct research into incentives for compliant road user (specifically fleet owners and drivers) behaviour (Behavioural economics research).	4A(ix)	Long	RTMC
	• Develop and rollout public education programme to protect VRUs.	4B(i)	Short	RTMC

Theme	Intervention	ID	Period	Lead agency
Improve road user behaviour – Education/training	• Enhance school-based safety programmes including scholar patrol, pedestrian safety and cyclist education.	4B(ii)	Short	RTMC
	• Implement traffic management plans for education institutions.	4B(iii)	Short	RTMC
	• Revise driver training processes and testing (all license types, including K53 and Learners Licence tests) - Investigate opportunity for school and TVET-based graduated learner driver programmes to enable learners to acquire drivers' licensing together with their grade 12 or technical and vocational qualifications.	4B(iv)	Medium	RTIA/RTMC
	• Teach children from pre-school level about keeping safe on roads.	4B(v)	Medium	RTMC
	• Introduce sustained road safety education in the basic education curriculum.	4B(vi)	Medium	RTMC
	• Incorporate technology for driver training and licencing to improve driving abilities of new drivers.	4B(vii)	Long	RTMC/RTIA
Improve enforcement effectiveness	• Ensure that traffic departments provide a 24/7 service nationally.	4C(i)	Short	RTMC
	• Develop, implement and enforce intelligence-led adherence to road laws, with focus on protection of VRUs and passengers, through the use of seatbelts and child restraints.	4C(ii)	Short	RTMC
	• Urgently investigate the deficiencies in current enforcement practices and systems, and rectify.	4C(iii)	Short	RTMC
	• Enforce stricter adherence to seatbelts safety standards on all road-based public transport vehicles and the use thereof.	4C(iv)	Short	RTMC
	• To improve police enforcement intelligence through appropriate use of latest technology (e.g. integrated enforcement system, speed-over distance technology).	4C(v)	Medium	RTMC
	• Identify and address of high risk road users for focused interventions.	4C(vi)	Medium	RTMC
	• Start regular national traffic patrols along hazardous/high risk locations.	4C(vii)	Medium	NPA
	• Improve enforcement and consider the introduction of Traffic Courts.	4C(viii)	Medium	RTMC
	• Implement repeat offender disqualification together with rehabilitation programmes for license reinstatement (refers to drivers exhibiting reckless behaviour e.g. intoxication, negligence etc.)	4C(ix)	Long	RTIA
	• Implement medical disqualification – and rehabilitation – (Physically unfit drivers).	4C(x)	Long	RTMC
Increased protection for VRUs	• Establishment of community-based pedestrian/VRU safety teams.	4D(i)	Short	RTMC
	• VRU safety to be included as a key component of Road Safety Manual.	4D(ii)	Short	RTMC
	• Implement NMT policy requiring roads authorities to prioritise vulnerable road users.	4D(iii)	Medium	DOT

Table 23: Actions for safer road users

PILLAR 5: Post-crash Response

Theme	Intervention	ID	Period	Lead agency
Increase effectiveness of first responses	• Deployment of ambulances at high risk locations during peak periods.	5A(i)	Short	DoH
	• Strengthen interaction with DoH and private medical sector in post-crash response (Also HPCSA, medical schools, MRC, etc.).	5A(ii)	Short	RAF
	• Clarification of on-scene response roles / Areas between SAPS, National Traffic Police, Metro Police, Provincial Traffic, Municipal Traffic, etc.	5A(iii)	Short	RTMC
	• Investigate the feasibility for Traffic Police to be legislated to handle fatal crash investigations.	5A(iv)	Short	RTMC
	• Introduce technology use on crash scene to obtain precise location of crashes.	5A(v)	Short	RTMC
	• Increase crash investigation capacity at SAPS and other agencies involved with the function.	5A(vi)	Medium	RTMC
	• Mobilisation of intensive care ambulances for high risk rural sites.	5A(vii)	Long	DOH
	• Increase the number of trained trauma medical personnel, nurses, paramedics, etc. in collaboration with the Health and Welfare Sector Education and training Authority (HWSETA).	5A(viii)	Long	DOH
	• Incentivise Private Health establishments to treat road crash victims.	5A(ix)	Long	DOH
Simplify access to post-crash care	• Full roll-out of the Road Accident Fund model to improve access to quality healthcare and to make the application for financial assistance efficient and easily accessible to all communities.	5B(i)	Short	RAF
	• Implement a single emergency response number across South Africa.	5B(ii)	Short	RAF
	• Introduce RABS.	5B(iii)	Long	DOT

Table 24: Actions for post-crash response

5.9. Steering and governance

The responsibility of implementation

For each intervention, there is a lead agent responsible for ensuring the successful execution of that particular component of the strategy. The table below summarises the general governance structure of road safety and highlights the primary responsibilities of different agencies per intervention type.

Development of Legislation & Policy, Monitor Implementation and Conduct Impact Assessment **Department of Transport**				
Development of road safety plans and targets – Coordinate Deployment of Resources **RTMC**				
Law enforcement	**Road Safety Education**	**Engineering**	**Monitoring & Evaluation**	**Emergency & Post Crash Response**
• Metro Police • Municipal Traffic Police • Provincial Traffic Police • National Traffic Police • CBRTA • SAPS • DoJ	• All road entities • Municipal Road Safety Departments • Provincial Departments of Safety and Liaison	• SANRAL • Provincial Departments of Roads • Municipal Infrastructure Departments	• DoT	• RAF • DoH • SAPS • RTMC • SANRAL • Provincial Traffic • Metro Police • Tow Truck companies

Table 25: Responsible agency per intervention focus

The strategy document recognises that the government has assumed the lead in the development of the Road Safety Strategy 2016 -2030 notwithstanding that the issue of road safety is common to a broader range of stakeholders, which includes citizens, the private sector and greater South African society. The successful implementation of the strategy is thus emphasised as a collective responsibility and not the work of government alone.

Road Safety Strategy Oversight

The execution of the strategy implementation is largely subject to management and commitment by government to the cause of road safety in South Africa. In light thereof, an inter-ministerial oversight council, hereafter referred to as the Council, must be established to ensuring this feat is realised.

The Council should take on the following structure:

- The Council should consist of the following members appointed by the Presidency:
  - A person, who in the opinion of the Presidency, is an expert on road safety, possessing special knowledge regarding road safety supported by relevant training and experience;
  - A person nominated by the road safety lead agency, the Road Traffic Management Corporation (RTMC), as a representative of the agency
  - A person nominated by the Road Safety Advisory Council, as a representative of the advisory council
  - A member of the Presidency, designated by the Presidency as a chairman; and

  - A person designated by the Presidency as the deputy chairman.
- Six members shall be Ministers or representatives appointed by the relevant Ministers of the following national departments of government:
  - Department of Transport;
  - Department of Justice;
  - Department of Health;
  - Department of Basic Education;
  - Department of Higher Education and Training;
  - Department of Cooperative Governance.
- One member shall be the South African Police Commissioner or appointed representative by the South African Police Commissioner
- Other members of the Council should include representatives of other road safety Agencies
- Representatives from business, NGO's, SBO appointed by their own constituencies

The objectives of Council shall be as follows:

- Strengthen the governance, leadership and management of the NRSS as the main response to road safety across national, provincial, district and local levels of government;
- Facilitate discourse between government, all other parties and the public to ensure alignment on the NRSS as the main response to road safety in accordance with other existing transport plans, policies and strategies, including but not limited to the NDP (2030);
- Coordinate multi-sectoral stakeholders and assign responsibilities including but not limited to policy review, programme management and coordination, technical assistance and capacity building and sectoral support, for implementation of the NRSS in accordance with the mandates of each stakeholder and aligned to the requirements of the NRSS;
- Monitor the progress of the implementation of the NRSS according to the targets set in the NRSS and evaluate the progress annually;
- Report on the progress of the implementation of the NRSS at each sitting of the Council;
- Identify new, and strengthen existing partnerships for the execution of the NRSS among government agencies, non-governmental organisations (NGOs), the private sector, fund donors, agencies of the United Nations, victims of road injury/survivors of road crashes, communities, and all other related parties; and
- Mobilise resources (including if required, the allocation of existing and additional funds and human resources) for the financing and staffing of the NRSS, including but not limited to estimating expenditure and resource needs, fund-raising from domestic and international institutions, including Treasury, donor coordination and investigating new sources of funding.

In the process of establishing this inter-ministerial oversight council, consideration must be made for the institutional arrangement and mandate of the Council to ensure that the roles of strategic, managerial and implementation oversight occur.

Monitoring and evaluation

The implementation of the Road Safety Strategy must be tracked and progress monitored and evaluated to ensure delivery to plan in accordance with planned timeframes. The implementation components should be captured in the annual business plans of all departmental or agency units and monitored and evaluated in accordance with performance contracts.Annual reports on the progress of the strategy need to be published, within six months of year end. Any required adjustments or revisions to the road safety strategy must come into effect within a time period as specified by the NRSCC in an effort to ensure that deviations do not compromise the strategic objectives and targets.

Risk and mitigation actions

Table 26: Key risks and mitigating actions, lists critical risk factors that should be considered for implementation of the strategy. In addition, mitigating actions are listed which aim to address these risks:

Potential Risk	Mitigating actions
Absence of impetus to drive implementation within departments and drive social change through public engagements	• Government support should be illustrated through regular public commitments regarding road safety • Government support for resources and funding to implement NRSS • Allocate appropriate funding towards road safety agencies • Establish or amend legislation regarding road safety where necessary • Develop continuity plan for road safety in the event of an institutional change • Establish a National Road Safety oversight committee, headed up by the Minister of Transport, with the mandate and authority to deliver of the implementation of the strategy
Operational Performance: operationalisation of the strategy; lead agency and related road safety stakeholder performance below expectation (failure to deliver to plan)	• Develop an overarching detailed implementation plan • Draw up specific action plans per agency assigning responsibility along with allocated human and financial resourcing for task delivery • Develop project milestones for the implementation of the action plans and against which to regularly evaluate progress • Link the delivery of the action plan to employee performance appraisals
Lack of accurate data due to lack of advancement in data systems and technology, inefficient data collation and distribution processes	• Establish centralised database platform with access for all road safety stakeholders • Establish standardised process to capturing and collation of road safety related statistics • Initiate frequent audits of road safety and related transport data • Implement use of intelligent systems for road traffic, law enforcement and road safety
Opportunity for fraud and corruption	• Provide rigorous, adequate, periodic training for road safety, transport and law enforcement officials • Review and provide adequate remuneration to road safety, transport and law enforcement officials • Institute zero tolerance approach to fraud and corruption across government departments and all road safety, transport and related agencies

Potential Risk	Mitigating actions
Lack of funding	• Approve budget for road safety (National Treasury) • Support and motivate for increased funding where necessary • Reallocate existing funds within DoT, road safety agencies and related institutions
Insufficient agency capacity and mismanagement of human resources (including stakeholder participation)	• Conduct capacitation exercise across DoT, road safety agencies and related institutions • Support motivation for additional human resources if necessary • Eliminate or repurpose existing superfluous resources • Link the delivery of action plan to employee scorecards
Lack of ongoing monitoring and evaluation	• Initiate reporting cycle frequency according to milestones on the implementation plan • Institutionalise reports for the attention of the Minister of Transport • Develop Annual Performance Plan reporting on all aspects of road safety • Publically publish annual progress to plan

Table 26: Key risks and mitigating actions

Policy, legislative and institutional reform

The following plans, policies, and legislation need to be amended/effected/reviewed to enable effective implementation of this strategy:

- Review of the National Road Traffic Act, 93 of 1996, as amended.
- Finalisation of the amendment and implementation of AARTO.
- Promulgation of the RABS Bill
- Driving Schools Regulation

6. Concluding Remarks

In conclusion, the strategy has made an extensive effort to take into account the full spectrum of road safety across all functions, stakeholders and users. Understanding the sector and interrogating the nature and complexity of the challenges relating to road safety is at the centre of the approach, so as to develop a holistic strategy which is relevant, responsive and robust over an extended implementation period. The impetus of the strategy is to reduce the number of fatal crashes and related fatalities on South African roads by 50% from the 2010 baseline by 2030. This target is only achievable if the paradigm that ***everyone is responsible for road safety*** in the country is adopted and acted upon. However, this responsibility must be articulated in order to assign accountability and ensure there is a motivated drive by government to bring about a change in the current road safety landscape.

To this end, the interrogation of the challenges yielded a set of strategic themes, which needed to be unpacked and developed into objectives, key performance areas and targets. In line with international best practice and global guidelines, these components of the strategy were framed according to the Five Pillars for road safety, as propagated by the United Nations Decade of Action for Road Safety. Furthermore, the framework provides a two-fold approach to the strategy focusing on both the strategic requirements and the implementation plan. It also addresses what governance and institutional requirements are needed to ensure and enable the strategy to be executed. The principle throughout the strategy is that implementation must happen in a coherent and synergised manner, along a predetermined timeline in order to bring about the desired changes to the road safety environment, address the challenges identified and establish a new reality aligned to the vision of the strategy for safe and secure roads.

The user-centric perspective of the strategy aims to put people and the conservation of life at the centre of the strategy. In meeting its obligation to its citizens to bring about a safe and secure road environment, the government will meet its own targets but must also achieve its global obligation as a participant in the UNDA to reduce the number of fatal crashes and fatalities globally.

Based on the analysis completed there are four critical areas for intervention that comes to the fore. These areas are found to be either directly or collectively at the root of the challenges within the road safety environment and are equally the source of the solutions which can mitigate or resolve these challenges. It is therefore necessary to prioritise the interventions which will bring about a change in:

- **Road user's behaviour**, which is seen locally and internationally as the greatest contributing factor to road crashes. Changing behaviour can only be affected by ensuring users are *educated* and *aware of road safety*, *trained* to behave appropriately and effectively *discouraged* from transgressing laws through enforcement. This includes the need to eliminate corruption.
- With large proportion of deaths on the roads being pedestrian related, emphasis needs to be placed on **developing and refining infrastructure design aimed at protecting VRUs** specifically.

- The entire strategy hinges on the **effective leadership and governance** to oversee that implementation is completed and operational requirements are effectively addressed.
- **Data and knowledge management** is an enabling element and a major shortcoming in the South Africa environment. Addressing shortcomings in this space will allow for greater efficiency in the application of resources and better tracking of progress

Each element or component of road safety is complex in nature and could potentially be the subject of extended research and the formulation of targeted and specific strategies respectively. In the implementation process, further development of a strategic approach for specific areas may be identified and pursued.

APPENDIX

Appendix A: Best Practice Countries

Best practice country selection

Road safety strategies from seven countries have been assessed in order to extrapolate lessons and insights to assist in the development of the new road safety strategy. This chapter summarises the key insights from each of the best practice strategies. The importance of this exercise is to:

- Benchmark the strategic focus of this strategy with global best practice;
- Consider the successes and shortcomings of previous efforts made in countries with similar road safety environments, in an attempt to learn therefrom; and
- Interrogate the strategic thinking of previous efforts in order to discover solutions that can be adapted and improved upon to suit the unique South African context

The table below introduces each of the strategies and countries reviewed highlighting the reason for their inclusion and relevance to South Africa.

Best Practice Country and Strategy	Reasons for inclusion	Relevance to South Africa
Australia ***National Road Safety Strategy (2011-2020)***	• Leading global example of road safety management • In 1975 traffic deaths were 30.4 per 100 000 population • By 2003 crash death rate dropped to 8.2 per 100 000 population	• Historical traffic data similar to our current data • Known for improvements in road user behaviour
United Kingdom ***Strategic Framework for Road Safety (2011)***	• Leading global example of road safety management	• National approach to road safety and effective local applications ○ Effective coordination of road safety across ○ Role of national Government in providing leadership in road safety
Ireland ***Strategic Framework for Road Safety (2011)***	• Ireland is a leading global example of road safety education and awareness	• Lessons and initiatives around education and awareness: ○ Innovative interventions to change behaviour ○ Leading initiatives in educating public on road safety ○ Road safety awareness

Best Practice Country and Strategy	Reasons for inclusion	Relevance to South Africa
Wales ***Road Safety Strategy for Wales (2003)***	• Global example on focusing on road users as a key problem	• Innovative interventions to help improve road user behaviour ○ Understanding the road users responsibility to their safety ○ Locating road user risks and devising strategies to mitigate
Argentina ***The Argentina Road Safety Project (2010-2019)***	• Leading "Middle Income" country in road safety • Globally praised for successful application of World Bank road safety project guidelines	• Lessons on road safety management ○ Coordinated effort ○ Clear institutional responsibility ○ Capacitating public institutions to enable execution (funding and human resources) • Developing country similarities
Netherlands ***Sustainable Safety 1990 onwards***	• Pioneering making the road system intrinsically safe • Leading the long term elimination of death and serious injuries • Global leader in land use and network planning (road systems design)	• Lessons on long term planning • Insightful interventions for road system design
Sweden ***Vision Zero 1997 onwards***	• Pioneering the "Vision Zero" goal • Global leader in road safety management • A top global example on road environment and engineering design	• Innovative lessons on how to make the vehicle and road better protect human lives

Table 27: Best practice country comparison and rationale

Appendix B: Road Safety Strategy Roadmap

a. Management and Governance

a. Setting a Course for success

Paramount to the success of a strategy is the ability to execute thereon. Historically, as seen in the review of previous strategies, road safety efforts in the country have been hamstrung by issues of execution and continuous commitment. In order to ensure that these risks are mitigated, the National Road Safety Strategy (NRSS) 2016 -2030, has differentiated itself by setting out a detailed roadmap for implementation from the outset.

Successful execution and meeting the outlined objectives for the strategy, hinges on the means by which direction and control will be applied to human and financial resources in pursuit and delivery of the strategy[30]. Part of this includes clarifying roles and responsibilities of various stakeholders, consulted or informed vis-à-vis the execution of this strategy. Other determinants of how effectively this strategy will be implemented are:

- Allocating a budget and resources;
- Prioritise initiatives (methodology);
- Determining key performance indicators; and
- Monitoring and evaluation

This chapter describes each of these determinants in detail, and in so doing outlines how this strategy will be implemented and targets effectively achieved.

b. Proposed Governance Structure

It is the South African government's responsibility to set conditions for, enforce compliance to, and facilitate activities around, effective participation by all stakeholders involved in operationalising the NRSS. Though government[31] has taken the lead on road safety in the country, it is not solely responsible for ensuring South African roads are safe; this responsibility is attributed to all South Africans.

The proposed governance structure for road safety across the country consists of three tiers as illustrated in **Error! Reference source not found.** below.

[30] The King Report, 1998 – defines governance along these lines
[31] Government includes: All public sector institutions

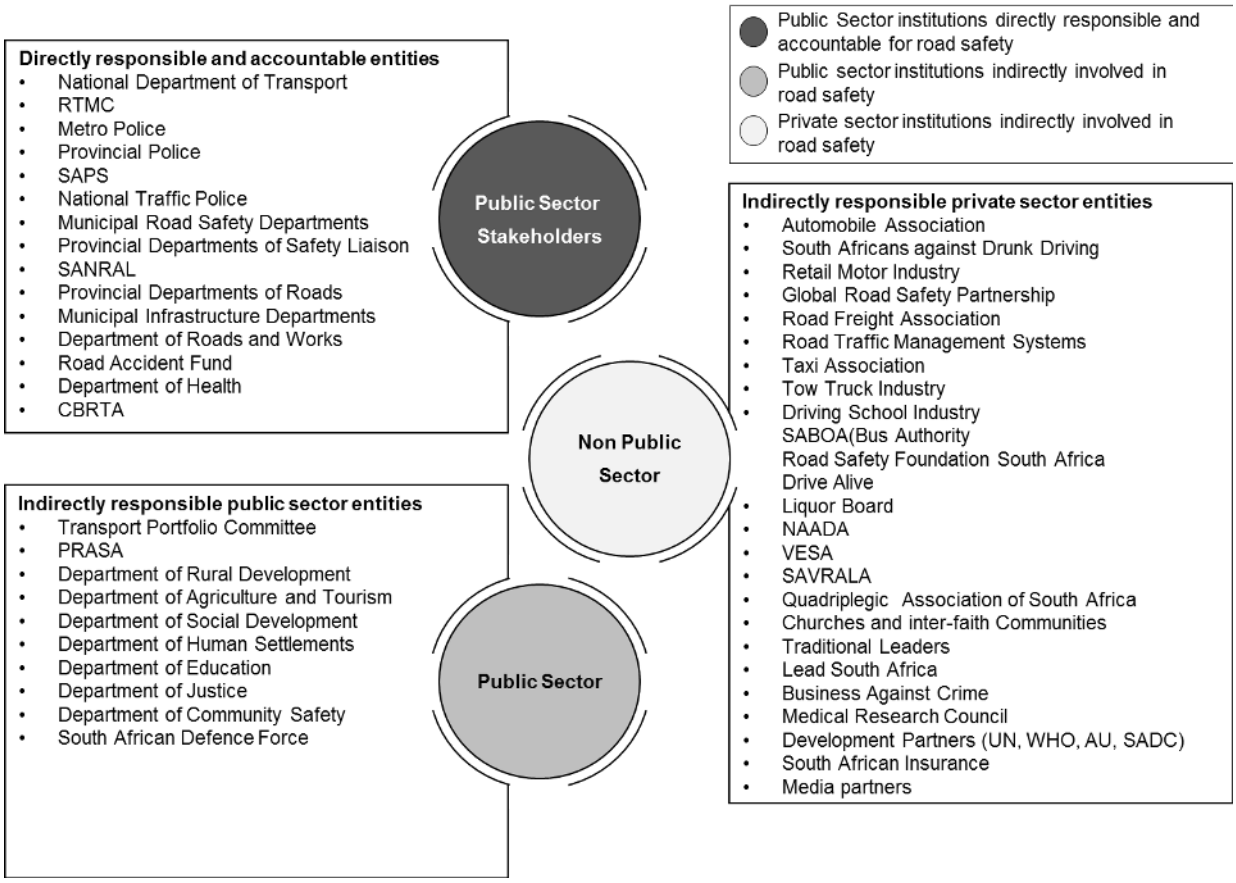


Figure 13: Proposed Governance Structure

The first category of road safety management in the country, seen as the primary set of stakeholders, comprises all public sector institutions which, through their legislative mandates are considered to be directly responsible and accountable for the road safety in the country. Within this category, the road safety governance structure consists of management business units and executing business units. At the managerial level are the National Department of Transport (DoT) and the Road Traffic Management Corporation, which together set the directive and ensure alignment and coordination in execution. Several agencies located across all three spheres of government, are responsible for various areas of road safety execution, as reflected in the Table 28**Error! Reference source not found.** below.

Table 28: Responsible agency per intervention focus

Development of Legislation & Policy, Monitor Implementation and Conduct Impact Assessment **Department of Transport**				
Development of road safety plans and targets – Coordinate Deployment of Resources **RTMC**				
Law enforcement	**Road Safety Education**	**Engineering**	**Monitoring & Evaluation**	**Emergency & Post Crash Response**
• Metro Police • Municipal Traffic Police • Provincial Traffic Police • SAPS • National Traffic Police • RTMC	• All roads entities • Municipal Road Safety Departments • Provincial Departments of Safety and Liaison • RTMC • Department of Education • Department of Social Development	• SANRAL • Provincial Departments of Roads • Municipal Infrastructure Departments	• National DoT • RTMC	• RAF • DOH • SAPS • RTMC • SANRAL • Provincial Traffic • Metro Police

The second category of road safety responsibility consists of public sector entities which are to be consulted and/or informed about road safety as their legislative mandates are critical to the integrated management solutions sought for road safety in the country. This category of public service institutions deals predominantly with the social components of road safety which goes beyond vehicles, enforcement and road infrastructure.

Lastly, there is the non-public category of stakeholders comprising of private sector entities and civil society organisations. This is a critical category as these stakeholders are strategic partners in the delivery of the NRSS at a community level. In addition to operating at the forefront of service delivery, these stakeholders also play a major role in championing the

strategy and performing a monitoring and evaluation role in terms of its impact and effectiveness on the ground.

The DoT will fulfil the role of oversight, covering the co-ordination and implementation, assuming political responsibility, and interfacing with the National Road Safety Strategy oversight Council (NRSOC). The Road Traffic Management Corporation will be responsible for the co-ordination of implementation plans and together with the NRSCC, provide oversight. All other entities and governmental departments are to be assigned responsibilities for implementation in accordance to their mandate and aligned to the requirements of the NRSS 2016 -2030.

c. Prioritisation and phasing Methodology

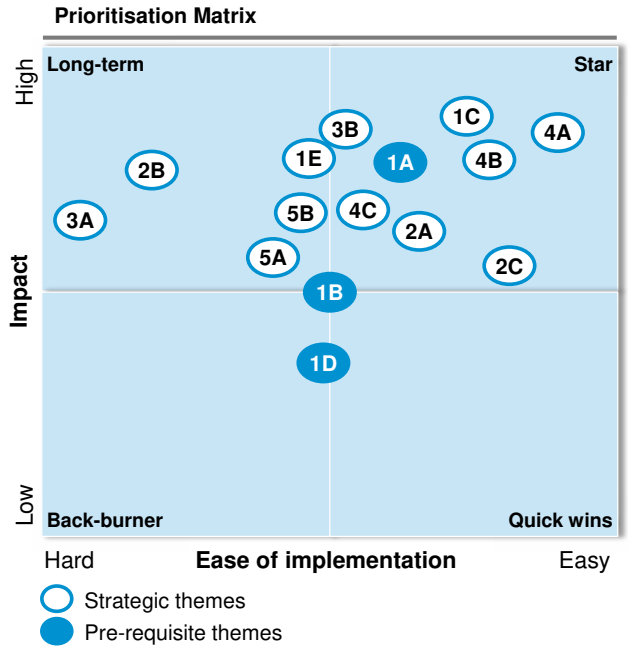
Prioritisation of interventions

Interventions are developed by evaluating road safety challenges and understanding their underlying causes. Some interventions address multiple challenges and underlying causes and likewise, certain challenges may also be addressed through multiple interventions. The appropriate prioritisation of these interventions is required to ensure effective implementation.

There are four critical areas for intervention at the fore of the strategy development process ranging from the point of identification of challenges and as-is assessments, to being featured across the pillar categories, and thereafter, the identification of strategic themes. These four areas are as follows:

- *Road User Behaviour, which is shaped by education, awareness and enforcement;*
- *Leadership and Governance;*
- *Infrastructure Planning and Design, aimed at protecting VRUs; and*
- *Data and Knowledge Management.*

In order to determine the sequence of interventions to be implemented, a prioritisation matrix has been developed that evaluates two factors, namely (1) ease of implementation, and (2) the impact on set targets. Ease of implementation is determined by evaluating interventions on estimated cost, human resource requirements, number of stakeholders involved, and time required for implementation. Impact is assessed based on the primary ability to reduce the number of road fatalities and thus indirectly, the economic and financial impact of crashes. This in turn links to the prioritisation of strategic themes as these components are related. An illustration of the prioritisation matrix is illustrated in Figure 14 below making use of identified strategic themes as the subject.



Pillar	Strategic theme	ID
Pillar 1: Road safety management	Improve coordination and management	1A
	Improve road safety data systems	1B
	Eliminate fraud and corruption	1C
	Ensure adequate funding and capacity	1D
	Enhance use of technology to protect road users	1E
Pillar 2: Safer roads and mobility	Address high risk locations (safety assessments)	2A
	Provide a self-explaining and forgiving road environment for all road users	2B
	Regular road audits on new projects	2C
Pillar 3: Safer vehicles	Increase vehicle safety standards	3A
	Ensure vehicle on road network are roadworthy	3B
Pillar 4: Safer road users	Improve road user behaviour & involve communities in road safety	4A
	Improve enforcement effectiveness	4B
	Increased protection for VRU's	4C
Pillar 5: Post-crash response	Increase effectiveness of first responses	5A
	Simplify access to post-crash care	5B

Figure 14: Prioritisation Matrix

The prioritisation framework depicted above categorises interventions in four quadrants, giving an indication of the comparative priority. The characteristics of these interventions are described below, as per each of the quadrants:

- Pre-requisite interventions are aimed at creating an enabling environment for the implementation of all other interventions;
- Star interventions should are those which require immediate focus as these are deemed easiest to do, while delivering equally high impact;
- Quick wins are interventions with limited impact on road fatalities but are easy to implement and thus should be given secondary focus;
- Long-term interventions are those with expectation for delivering high impact but due to slightly challenging implementation requirements, are better suited to being addressed in the medium to long term; and
- Back-burners are particularly difficult to implement and deliver low impact in reducing fatalities. Thus, these interventions are likely to only be attempted in the long term, or may fall off the radar completely.

Phasing of interventions

Effective execution further entails the need for clear focus and thoughtful sequencing of interventions. This is necessitated by the resource-constrained context in which road safety is promoted in the country. As a developing economy, South Africa's fiscal and human resources are limited. Furthermore, there is a great need for existing resources to be directed toward activities which directly facilitate economic growth and development e.g. funding industrialisation. Improving the safety of South African roads is therefore a task where much is to be achieved with very little.

Based on the above prioritisation methodology, the interventions and associated strategic themes have been sequenced in short, medium and long term phases for implementation illustrated in Figure 15 below.

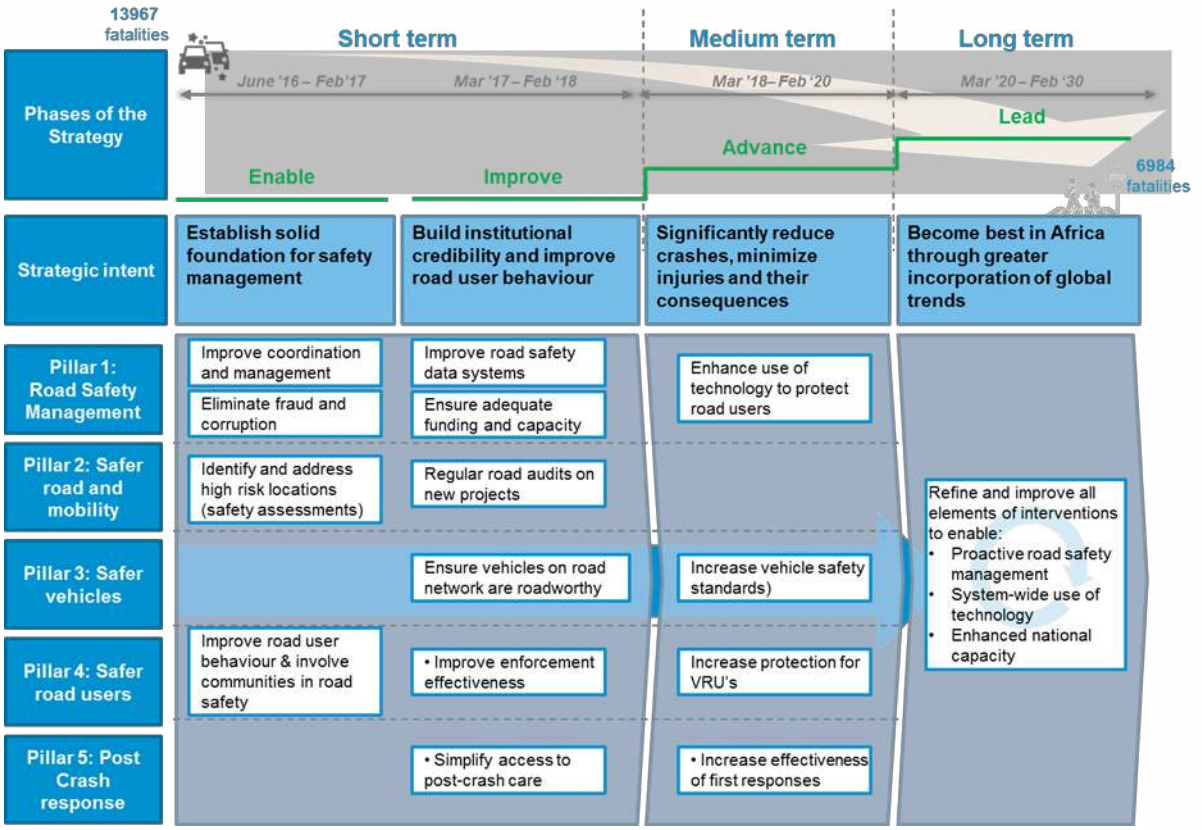


Figure 15: Phasing of interventions by theme

d. Measures and KPIs

The success of the NRSS 2016 – 2030 will be based largely on the extent to which monitoring and progress is measured. In order for this to be done effectively, clearly articulated outcome-based key performance areas must be identified and assigned a measurement. Measurement tools utilised must ensure both quantitative and qualitative indicators are covered.

At a strategic level, all themes, objectives and interventions should collectively impact the reduction in the number of fatal crashes and fatalities related thereto. Table 29 depicts a non-exhaustive list of the quantitative and qualitative measures for the strategic target of reducing the number of fatal crashes and crash fatalities:

Strategic Target	Quantitative measure	Qualitative measure
Reduce the number of fatal crashes from the 2010 baseline by 2030	Number of fatal crashes	Number of fatal crashes per: - Type of road (Urban or Rural) - Vehicles involved - Time of crash - Exact location of crash - Weather conditions - Reason for crash
Reduce fatalities by 50% from the 2010 baseline by 2030	Number of fatalities per 100 000 population	Number of fatalities per: - Age (children, youth, elderly) - Car occupants - Vehicle type - Motorcyclists - Pedal cyclists - Pedestrians - Disabled persons
		Number of resultant post-crash fatalities
		% of road deaths as percentage of total accidental deaths
		Cost of road traffic fatalities

Table 29: Strategic Quantitative and Qualitative Measures

On the following page, the various pillars with associated strategic themes are shown with proposed KPIs to measure performance to objectives. These KPIs are not exhaustive and does not include the quantitative detail of Table 29 above, however, it serves as a guideline on the type of indicators considered pivotal to monitor for each pillar.

PILLAR 1: Road safety management

Strategic theme	Objectives	KPIs
Improve coordination and management	Strengthen cooperation between government departments and clarify existing overlaps in responsibility	• Establishment of inter-departmental National Roads Safety Council (NRSC) with fixed scheduled meetings by 2017 • Adherence to defined meeting schedule • Measure number of interventions implemented • Annual release of reports on all interventions' performance
	Strengthen public private partnerships to advance safety standards and clarify existing overlaps in responsibility	• Number of public/private engagements relating to Road Safety • Number of public/private formal partnerships entered into related to Road Safety
	Ensure that legislation and regulations support the successful execution of this strategy	• Review and assess all relevant legislation by 2018 • Development of response plan for legislative changes completed by 2019 if applicable
Ensure adequate funding and capacity	Ensure adequate funding and resourcing for road safety interventions	• Establish road safety budget to deliver NRSS by 2017 • Number of partnerships identified to resource the implementation of the strategy
	Ensure that all road safety practitioners are adequately skilled, and that responsible entities have sufficient capacity	• Determine resource and capacity baseline by 2017 • Develop and implement industry professionalisation framework by 2018 • Number and type of training interventions • Percentage of posts filled
Eliminate fraud and corruption	Eliminate incidences of fraud and corruption through improved anti-corruption processes and enforcement	• Development of national anti-fraud policy for implementation by all entities in all regions by 2018 • Number of anti-corruption training interventions rolled out to government officials and members of the public • Number of officials trained on anti-corruption • Number of members of the public trained on anti-corruption • Number of incidents of fraud and corruption reported, charges investigated, and prosecuted successfully • Number of new systems and processes introduced to address fraud and corruption
Improve road safety data systems	Integrate data management systems for road safety to strengthen reporting structures and ensure monitoring and evaluation	• Establishment of an improved single centralised national data management system by 2018 to integrate and share information between all spheres of government • Number of annual data audit processes completed • Number of interventions undertaken and progress thereof • Annual publication of the progress of interventions undertaken
	Ensure that all road safety interventions and practices are based on appropriate analysis/theory of change and are also regularly monitored and evaluated	
Enhance the use of technology	Identification and implementation of technology to improve road safety	• Number of technological interventions in stages of implementation (identified, in review, testing, procurement, piloting and implemented)

Table 30: Objectives and performance indicators for road safety management

PILLAR 2: Safer roads and mobility

Strategic theme	Objective	Key performance indicators
Identify and address high risk locations (safety assessments) & regular road audits on new projects	Improve spatial development planning and ensure regular assessment of roads in hazardous/high risk locations to address road safety[Error! Bookmark not defined.]	• Number of hazardous locations identified; • Number of road safety incidents at identified hazardous locations; • Review the 1999 Road Safety Manual and include guidelines on spatial planning to improve road safety and measures to eliminate hazardous elements of high-risk locations
Provide a self-explaining and forgiving road environment for all road users	To improve the standards of road design to ensure that all road users are given adequate protection and information - focus on VRUs	• Review legal requirements for execution of road safety audits and monitor adherence; • Number of crashes involving VRU, including number of fatalities, number and level of injuries and reasons for crash • Review design standards to ensure the mainstreaming of the needs of VRU's, especially pedestrians
	To ensure that road design is forgiving, thus allowing motorists to recover from error, or to survive the impact when a crash is inevitable	
	To support improved access to public transport in order to reduce number of VRU's on major roads	• Number of passengers utilising the public transport system • Costs associated with public transport

Table 31: Objectives and performance indicators for safer roads and mobility

PILLAR 3: Safer vehicles

Strategic theme	Objective	Key Performance Indicator
Ensure vehicles on road network are roadworthy	Strengthen roadworthiness mechanisms to ensure safety of vehicles on the country's roads and compliance to vehicle safety standards[Error! Bookmark not defined.]	• Number of non-roadworthy vehicles on road • Number of roadworthiness tests completed • Establish vehicle safety standards by 2018 • Assess gaps in road worthiness mechanisms by 2019 • Number of road worthiness testing processes updated/ changed/ added
Increase vehicle safety standards	Promote the fitment of protective vehicle technologies including amongst others, seatbelts, airbags and driver support warning devices	• Number of targeted engagement with industry • Number of instances of application of safety technologies
	Advance the safety standards of public transport vehicles, (including bakkies and trucks) and drivers, in order to protect passengers and other road users	• Establish safety requirement baseline by 2018 • Number of new safety standards introduced • Number of crashes involving injuries to vehicle occupants

Table 32: Objectives and performance indicators for safer vehicles

PILLAR 4: Safer road users

Strategic theme	Objective	Key performance indicators
Improve enforcement effectiveness	Strengthen law enforcement efforts and systems	• Number of traffic violations occurred • Statistics on status of fines (number of paid/ unpaid/ followed up/prosecuted fines (RTIA data)) • Development of intelligence-led enforcement campaigns for national implementation • Increased visibility of traffic police, 24/7 (measured by surveys) • Successful implementation of AARTO • Implement systems to identify repeat offenders by 2018
Improve road user behaviour & involve communities in road safety and Increased protection for VRU's	Educate people about the dangers of irresponsible road usage and road users on the need to be responsible	• Number of educational/road safety awareness campaigns initiated • Incorporation of specific road safety content in basic education curriculum by 2017 • Improved road safety knowledge of South Africans year-on-year (measured through surveys)
	Improve skills and abilities of drivers	• Regulate driving schools by 2019 • Implement alternative licensing process by 2020 • Introduction of driver re-testing by 2022 • Number of drivers re-tested periodically
	Involve citizens in debates around road safety, and in leading road safety campaigns and interventions	• Number of VRU crash statistics: cyclists; motor passengers, cyclists, pedestrians etc. • Number of programmes, activities to promote community discussion and involvement in road safety at school and community level • Number of learners and community members engaged in road safety programs • Number of incentives developed for good driving/ road user behaviour • Development of bi-annual conference for youth on road safety • Number of youth role models included in Road Safety Ambassador programme
	Increase public engagement around road safety	
	Intensify efforts to deal with distractive and destructive driving behaviour	• Number of crashes occurred due to internal driving distractions • Number of crashes occurred due to external driving distractions • Number of crashes occurred due to driving under the influence of alcohol and/or drugs
	Intensify efforts to deal with speeding and determine appropriate speed limits	• Number of crashes occurred due to speeding; • Number of speeding tickets issued; • Measure of average speeds as well as vehicles exceeding the speed limit (existing nationwide continuous traffic observation (CTO) data can be employed) • Number of instances that speed limits have been changed

Table 33: Objectives and performance indicators for safer road users

PILLAR 5: Post-crash response

Strategic themes	Objective	Key performance indicators
Simplify access to post-crash care	Simplify and improve education for the access to post-crash response services (incl. RAF)	• Implementation of a single, national emergency response number by 2018 • Number of calls received per respective emergency number • Number of response requests per communication type • Number of inquiries to RAF • Number of successful vs non-successful claims to RAF
Increase effectiveness of first responses	Address inconsistencies and improve quality and responsiveness of treatment (including training and resources)	• Average response time per area • Comparison of survival rates of victims per area • Complete annual audits of skills and equipment per area • Implement RABS by 2020
	Address shortage of funding for medical treatment, rehabilitation and loss	• Average value of funding allocated per victim • Average cost of treatment, rehabilitation and loss
	Strengthen coordination and management of post-crash response resources and information of various stakeholders	• Number of post-crash response command centres • Number of reporting lines • Number of different resources allocated per respective service supplier (government agencies, public entities) per area • Number of post-crash response requests per area

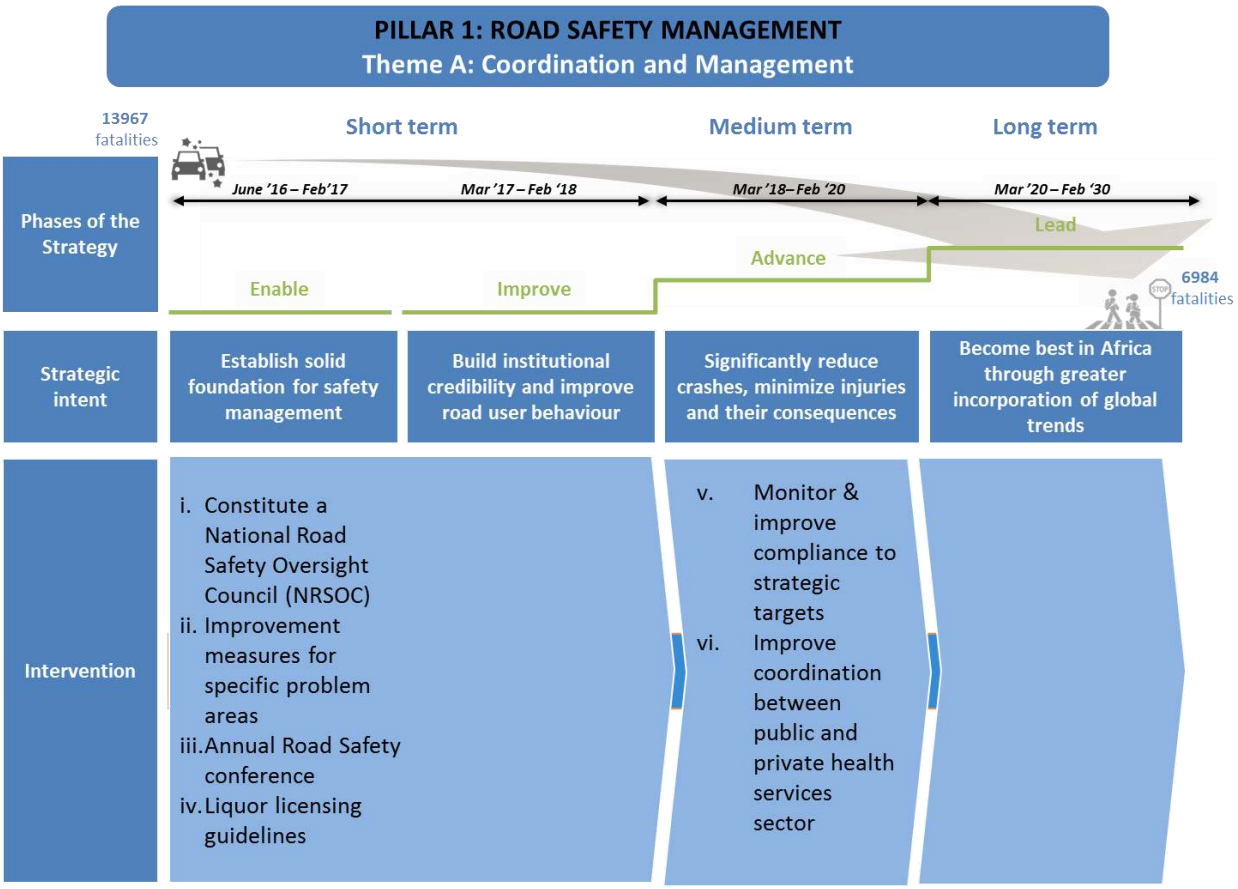
Table 34: Objectives and performance indicators for post-crash care

b.Intervention roadmap

a. Road Safety Management

1A: Improve coordination and management

PILLAR 1 Road Safety Management	**A. Improve coordination and management**
	B. Funding and capacity
	C. Reduce fraud and corruption
	D. Improve road safety data systems
	E. Enhance use of technology to protect road users



Short term interventions:

1A(i): Establish a National Road Safety Oversight Council (NRSOC) for governance and oversight of the strategy

Motivation: The DoT will fulfil the role of supervision regarding the co-ordination and implementation of the strategy. The Road Traffic Management Corporation will be responsible for the co-ordination of implementation. All other entities and governmental departments will be assigned responsibilities for implementation in accordance with their mandate and aligned to the requirements of the NRSS.

In light thereof, an inter-ministerial oversight council, hereafter referred to as the Council, must be established to ensure this feat is realised.

This council is to be established by the President and mandated to broadly ensure the effective operationalisation of the NRSS.

Timeframe: This can be initiated immediately.

Responsible Organisation/s: DoT.

Cost implication: **LOW:** This can be done within existing budgets, thus no additional cost implication.

Staffing: Capable of being done with existing manpower.

Specific tasks:

1. Establishment of the Council by the Presidency:
    - The Council should consist of the following members appointed by the Presidency:
        a. A person, who in the opinion of the Presidency, is an expert on road safety, possessing special knowledge regarding road safety supported by relevant training and experience;
        b. A person nominated by the road safety lead agency, the Road Traffic Management Corporation (RTMC), as a representative of the agency
        c. A person nominated by the Road Safety Advisory Council, as a representative of the advisory council
        d. A member of the Presidency, designated by the Presidency as a chairman; and
        e. A person designated by the Presidency as the deputy chairman.
    - Six members shall be Ministers or representatives appointed by the relevant Ministers of the following national departments of government:
        a. Department of Transport;
        b. Department of Justice;
        c. Department of Health;
        d. Department of Basic Education;
        e. Department of Higher Education and Training;
        f. Department of Cooperative Governance.
    - One member shall be the South African Police Commissioner or appointed representative by the South African Police Commissioner
    - Other members of the Council should include representatives of other road safety agencies including but not limited to SANRAL, RAF, SALGA etc.
2. The objectives of the council shall be:
    - Strengthen the governance, leadership and management of the NRSS as the main response to road safety across national, provincial, district and local levels of government;

- Facilitate discourse between government, all other parties and the public to ensure alignment on the NRSS as the main response to road safety in accordance with other existing transport plans, policies and strategies, including but not limited to the NDP (2030);
- Coordinate multi-sectoral stakeholders and assign responsibilities including but not limited to policy review, programme management and co-ordination, technical assistance and capacity building and sectoral support, for implementation of the NRSS in accordance with the mandates of each stakeholder and aligned to the requirements of the NRSS;
- Monitor the progress of the implementation of the NRSS according to the targets set in the NRSS and evaluate the progress annually;
- Report on the progress of the implementation of the NRSS at each sitting of the Council;
- Identify new, and strengthen existing partnerships for the execution of the NRSS among government agencies, non-governmental organisations (NGOs), the private sector, fund donors, agencies of the United Nations, victims of road injury/survivors of road crashes, communities, and all other related parties; and
- Mobilise resources (including if required, the allocation of existing and additional funds and human resources) for the financing and staffing of the NRSS, including but not limited to estimating expenditure and resource needs, fund-raising from domestic and international institutions, including Treasury, donor co-ordination and investigating new sources of funding.

1A(ii): Continue to support improvement measures to address the problem areas within road safety e.g. freight transport as they relate to road safety management efforts on national and provincial roads. e.g. roadworthiness, overloading, driver fatigue, etc.

Motivation: While much is known about road safety problems in South Africa there is a need for additional research and management of specific problem areas. Gaining a better understanding of these problem areas through research will in turn allow for the development of more appropriate, unique and effective solutions. In this regard, the improvement of coordination between departments on existing interventions is already underway.

Timeframe: Some research-based projects identified in the Roadmap are ready for immediate implementation and can be pursued by enlisting the assistance of universities and research organisations. Long-term relationships with these organisations can be established in the short-medium term in order to ensure a constant resource base for national road safety research needs. Research capacity within RTMC must also be expanded.

Responsible Organisation/s: RTMC, DoT, Provincial Departments

Cost implication: **LOW – MEDIUM:** Funds may be required for expanded research capacity and adequate resourcing.

Staffing: Adequate resourcing required for targets to be achieved, expansion capacity to be determined.

Specific tasks:

a. Increase research studies to determine the impact of particular road safety problems – for example, distracted driving, fatigue, the impacts of road marking innovations, etc.
b. Commission research that focuses on driver behaviour to ensure educational programmes are more focused on changing road user behaviour.
c. Align interventions and practises across Provincial Departments.
d. Evaluate interventions and campaigns that are implemented.

a. Capacitate research within the RTMC by appointing permanent research staff and building expertise in collaboration with experienced road safety researchers from across the country.

1A(iii) Establish an annual conference on Road Safety to enhance evidence-based solutions

Motivation: Sharing of good and appropriate practice between road safety professionals (e.g.traffic engineers, enforcement officers, etc.), can engender a higher attention to safety and the adoption of best practices from across the country. This type of engagement needs to be actively promoted and an annual conference would allow for this.

Timeframe: This can be done immediately for implementation with the SATC of 2017.

Responsible Organization: The DoT

Cost implication: This can be done within existing budgets, therefore no additional cost.

Staffing: Capability for this intervention exists within current capacity.
Specific tasks:

a. To enhance road safety knowledge and practice, a national conference should be held annually to provide an opportunity where research findings and outcomes from implemented initiatives could be presented and distributed. As the DoT already supports the annual SATC (which covers road safety), the first effort should be to encourage the allocation of at least one day at SATC to road safety research and knowledge sharing.

1A(iv): Support and influence the development of guidance for liquor licencing to include road safety considerations

Motivation: Driving under the influence of alcohol and drugs plays a significant role in crashes including those involving pedestrians. The location and ease of access to licenced liquor outlets especially within townships plays a role in exacerbating road fatalities and injuries and therefore calls for effective review and addressing in order to prevent this as far possible. A comprehensive review of current licencing patterns and legislation is in progress by the Department of Trade and Industry. Road safety considerations are to be identified by the various road agencies and provided as input into the development of holistic review programmes governing the licencing of liquor outlets.

Timeframe: Commence immediately

Responsible Organisation/s: Provincial and local government authorities

Cost implication: **LOW – MEDIUM**: Costs for review and amendment of legislation, by-laws, etc.

Staffing: Capability for this intervention exists within current capacity. External assistance may be pursued.

Specific tasks:

a. Undertake a review to identify road safety considerations to be taken into account for liquor licencing laws. This could include but should not be limited to identifying the number, location, etc. of liquor outlets especially those within townships, and the correlation with alcohol related crashes, as well as VRU impact analyses of this in the immediate vicinity.

b. Engage licencing authority and supply inputs.
c. Support the amendments to legislation or licencing restrictions accordingly.
d. Integrate solutions into holistic drink-and-drug driving road safety campaigns

Medium term interventions:

1A(v): Monitor and improve compliance by road authorities to strategy targets

Motivation: Roads authorities are currently not required to achieve specific targets in terms of reduced casualties on their road network. Making this a requirement would oblige roads authorities to be proactive in rolling out interventions and activities; and hence enhance national consistency and conformance to the NRSS objectives.

Timeframe: This can be initiated immediately but improvements are expected to come to fruition in the medium term. The Minister of Transport in issuing the conditional grant awards letters could instruct local and provincial government to adopt a set of norms and standards in this regard, in an attempt to institutionalise these targets.

Responsible Organisation/s: RTMC and DoT.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity. The creation of a provincial secretariat to manage and report on the performance of key targets may assist in expediting and entrenching the delivery of these targets.

Specific tasks:

a. DoT and RTMC to propose performance targets for all road safety entities based upon strategic imperatives.
b. Draft a set of norms and standards to be shared and adhered to across road authorities.
c. The RTMC has to ensure that the road safety data which is being collected enables the monitoring of road safety targets by the different authorities.
d. Regular monitoring and reporting by the relevant entities – agreement on a set of reporting norms and standards.

1A(vi) Continuous improvement of co-ordination between private and public health services to improve post-crash response rates across all areas

Motivation: South Africa has various organisations, both in the private and public sectors, that actively responding to road crashes to supply post-crash care. Due to the lack of co-ordination, significant overlap of resources and manpower occurs often with greater concentration in common locations, at the expense of sites where crashes are less frequent. To ensure improved effectiveness and responsiveness of entities, consistency of efforts and resources across all areas is required. This in turn requires a higher level of co-ordination and planning.

In order to better inform this planning and co-ordination, more detailed information would need to be collected and analysed. Emergency services and medical facilities keep patient records, which consist of vital information regarding the nature of injuries sustained by crash victims. These records are seldom shared among entities and thus a disconnect exists between police crash investigation forms and medical records of treated casualties. This leaves a gap in the understanding of both the scale and nature of survivable injuries sustained in a crash.

Timeframe: Engagement with various organisations can commence immediately through existing intergovernmental road safety forums. Implementation would be ongoing.

Responsible Organisation/s: DoT and RTMC

Cost implication: **LOW** (partly linked to data management interventions)

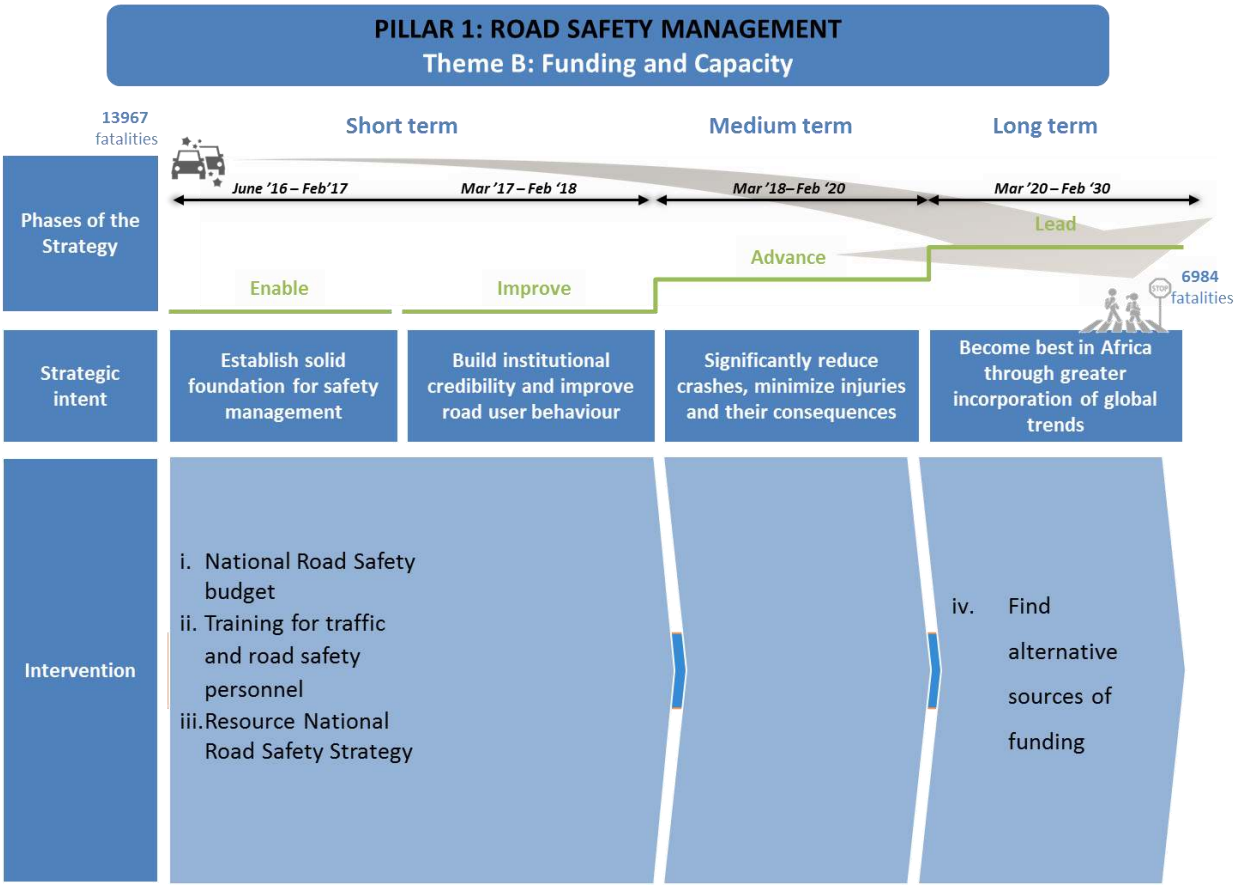
Staffing: Presently unclear, to be determined.

Specific tasks:

a. Utilise existing intergovernmental road safety forums and leverage on existing points of collaboration between the public and private sector. Alternatively, set-up such forums to initiate the process between entities and integrate this process with the interventions linked to data management improvement.
b. Standardise monthly reporting by medical facilities and emergency services to provincial authorities concerning crash scene attendance and related information.
c. Standard system of incident log recording to be created to avoid duplication of records and ensure data continuity.
d. Introduce a requirement for emergency response vehicles to have an activated GPS fitted. This will enable visibility on response times to crashes as well as provide identification of specific crash locations.

1B: Improve Funding and Capacity

PILLAR 1 Road Safety Management	A. Improve coordination and management
	B. Funding and capacity
	C. Reduce fraud and corruption
	D. Improve road safety data systems
	E. Enhance use of technology



Short term interventions:

1B(i) National road safety budget to be approved by Treasury
Motivation: In order to effectively implement the NRSS 2016 – 2030, sufficient budgeted funds are required to ensure adequate staffing and the effective implementation of interventions. Best practice research has revealed that countries that have successfully reduced road casualties have done so through the provision of funds allocated specifically to road safety. A recommendatory guideline by the WHO is for 10% of a country's transport budget to be ring-fenced for road safety interventions. This would ensure that the UNDA five pillars of road safety are sufficiently resourced to optimise their effectiveness and success. Timeframe: Immediate, for implementation in the next budgetary cycle. Responsible Organisation/s: DoT and National Treasury. Cost implication: **MEDIUM - HIGH:** Budgetary implications for road safety interventions can be achieved without duplication across departments/entities if properly coordinated, integrated and focused. Options also exist to combine budgets across entities/departments, create new budgets or refocus budgets as per the requirements of the NRSS 2016-2030. Staffing: Capability for this intervention exists within current capacity. Specific tasks: a. DoT to determine an adequate road safety budget, and submit to National Treasury for approval. This budget should allow for the adequate funding of the implementation of interventions as contained in the NRSS 2016 -2030 document.

b. Seek core funding supplementation from other sources e.g. traffic fine revenues, fuel levies, toll fees.
c. Centralise road safety funding to ensure greater visibility and distribution of available road safety funds.

1B(ii) Develop and roll out (standardised, modernised and improved) training packages for traffic officers and other road safety practitioners to increase education standards and level of professionalism

Motivation: Serious gaps in road safety education in South Africa have led to the emergence of road safety practitioners without requisite road safety education and/or qualifications. A notable improvement in enforcement and compliance levels can be achieved if those leading the process are adequately educated, skilled and capacitated. To this end, a SETA should set appropriate norms and standards for road safety training at NQF levels 4, 5, 6 and 7. DoT, in conjunction with the nine provinces in the country should agree to a determined list of traffic officer training facilities in order to ensure consistency in the quality of candidates who are accepted and subsequently qualify.

Timeframe: Coordination around this intervention can occur immediately. Additional time required for excess traffic police training and setup of training facilities.

Responsible Organization: The DoT, Dept of Higher Education – FVET, Public Works

Cost implication: **MEDIUM – HIGH:** Funds required for nationwide skills review and modernised, focussed training material and training facilities.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. DoT to embark on an independent external investigation of skills audits in order to determine the required baseline qualification levels of road safety officers, traffic officials and other road safety professionals.
b. Based on the findings from the road audits, identify current deficiencies and develop specific action plan to address personnel shortcomings across road safety entities.
c. Establish suitable training facilities.
d. Revise training programmes with relevant and current qualifications.

1B(iii) Complete a full resource and capacity assessment to determine a baseline to deliver the NRSS

Motivation: In order to implement the NRSS 2016 - 2030, all responsible departments and entities must be sufficiently capacitated and be equipped with the necessary expertise regarding human resources.

Timeframe: Immediate

Responsible Organisation/s: RTMC

Cost implication: **LOW - MEDIUM:** This intervention may require additional personnel at the RTMC, other road agencies and departments. Order of magnitude of additional costs estimated to be R10-million p.a.

Staffing: May require additional skills and personnel.

Specific tasks:

a. Identify current structures within respective government departments and agencies (map this out).
b. Complete detailed planning for the implementation of the NRSS including resourcing requirements, outline of the skills and qualifications required, and points of integration with other agencies
c. Resource structures accordingly with existing capacity and create a plan for capacitating under resourced areas within respective government departments and agencies

Long term interventions:

1B(iv) Find alternative sources of funding for road safety interventions (consider both public and private sector)

Motivation: Road safety interventions can be costly and in the context of limited public revenue, alternative sources of funding should be explored to supplement the road safety budget. Possible opportunities may exist in the rollout of additional traffic fines for offences, as has been achieved in Europe. Private sector contributions are an additional funding source to explore.

Timeframe: Immediate

Responsible Organization: The DoT, in co-operation with National Treasury.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

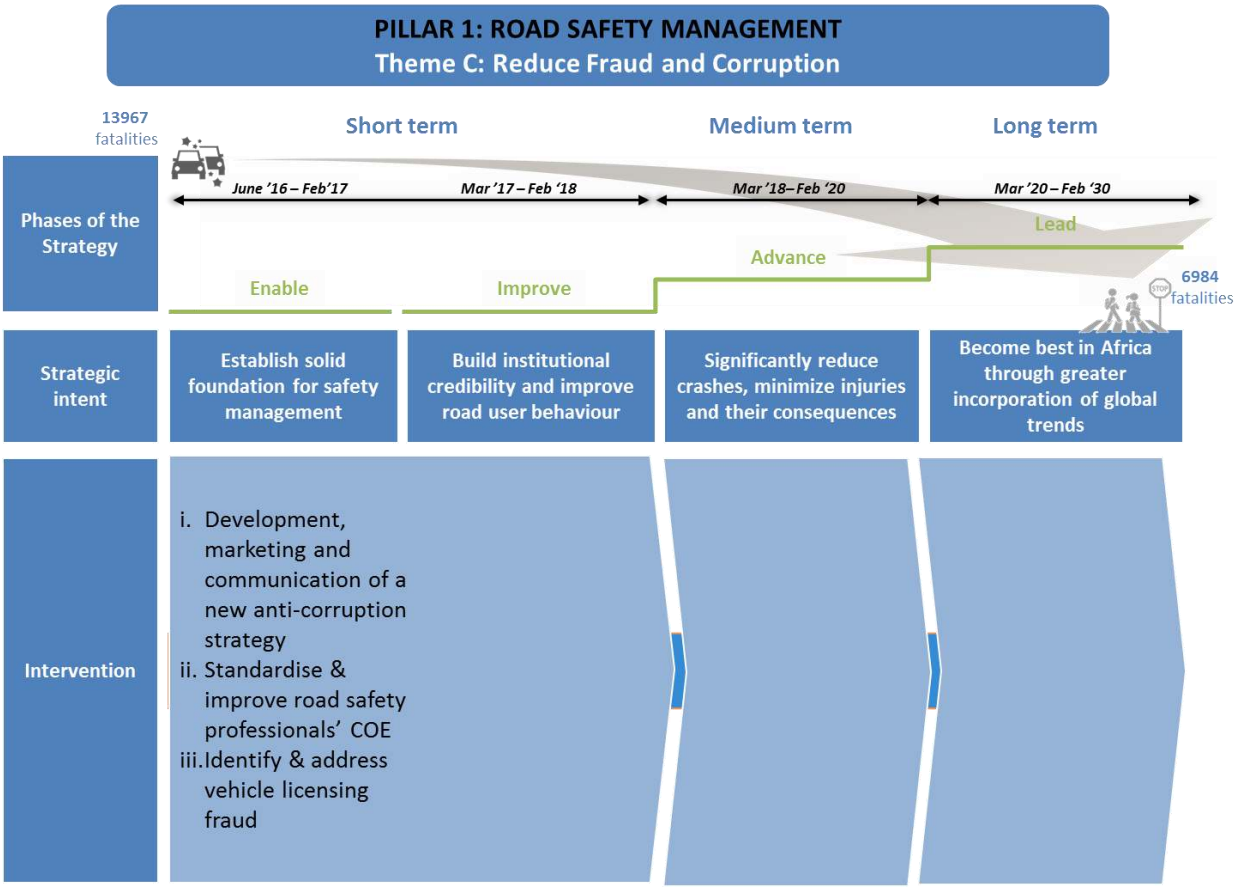
Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. Review budgets in light of detailed planning of interventions identified in the NRSS.
b. Explore all options for additional sources of revenue:
   i. Existing: grants, re-apportioning budgets, improving traffic fine collection processes
   ii. New: private sector partnerships; new and/or enhanced enforcement/fines

1C: Fraud and Corruption

PILLAR 1 Road Safety Management	A. Improve coordination and management
	B. Funding and capacity
	C. Reduce fraud and corruption
	D. Improve road safety data systems
	E. Enhance use of technology



Short term interventions:

1C(i) Support the development of the new anti-corruption strategy; followed by marketing and communications plan including drafting norms and standards for the corruption strategy.

Motivation: Corruption in road traffic services is an issue linked directly to poor road user behaviour, unsafe vehicles and drivers, and crash levels. For road safety to be achieved in South Africa, the issue of corruption must be tackled aggressively and eliminated. Clarity is required regarding whether set norms and standards exist for the reporting of corruption.

Timeframe: Immediate

Responsible Organization: DoT

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. DoT to assume the lead on curbing corruption within road traffic and law enforcement entities. DoT to establish a working group with representatives from all related road and transport entities, including local and provincial authorities, in order to develop an integrated action plan for the elimination of fraud and corruption in road safety matters.
b. DoT/RTMC to develop a public education campaign that clearly illustrates the undesirable and tragic consequences of allowing corruption to prevail in the road safety field. A system of penalties/fines should be developed for road users attempting to

bribe an official. Clear and easy reporting protocols should be put in place and advertised to highlight corrupt officials. A reward/incentive system should be considered for reporting corrupt officials.

c. The repercussions for being found guilty of engaging in fraudulent and corrupt activities for both officials (including traffic officers) and members of the public should be communicated publically in order to create awareness and dissuade others from engaging in such activities.

1C(ii) Standardise and improve employment conditions for road safety professionals

Motivation: Many departments as well as municipalities offer varied conditions of employment for similar positions. This often causes some departments/municipalities to have high staff turnover levels as road safety professionals move from one entity to another in order to attain better conditions of employment and higher official ranking. This high level of staff turnover causes a struggle to maintain consistency in implementation in some departments and municipalities. In order to address this issue, standardisation of employment conditions need to be implemented across road traffic functions.

Timeframe: Immediate

Responsible Organization: DoT

Cost implication: **MEDIUM:** Link to existing budgets for improved qualifications, training and capacitation

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. Review existing conditions of employment across all spheres of road safety nationwide
b. Align conditions of employment with qualifications review, revised SOP's and the determinations of the NRSS
c. Roll-out and implement

1C(iii) Identify and address opportunities for fraud and corruption in e-NATIS vehicle licensing

Motivation: Deficiencies exist within the e-Natis system that allows for the opportunity for fraudulent licensing of vehicles. An investigation is necessary to identify these opportunities for fraud and to propose the required changes to remedy such loopholes.

Timeframe: The investigation should commence immediately.

Responsible Organisation: RTMC

Cost implication: **LOW:** The cost of such an investigation is estimated at R3 million.

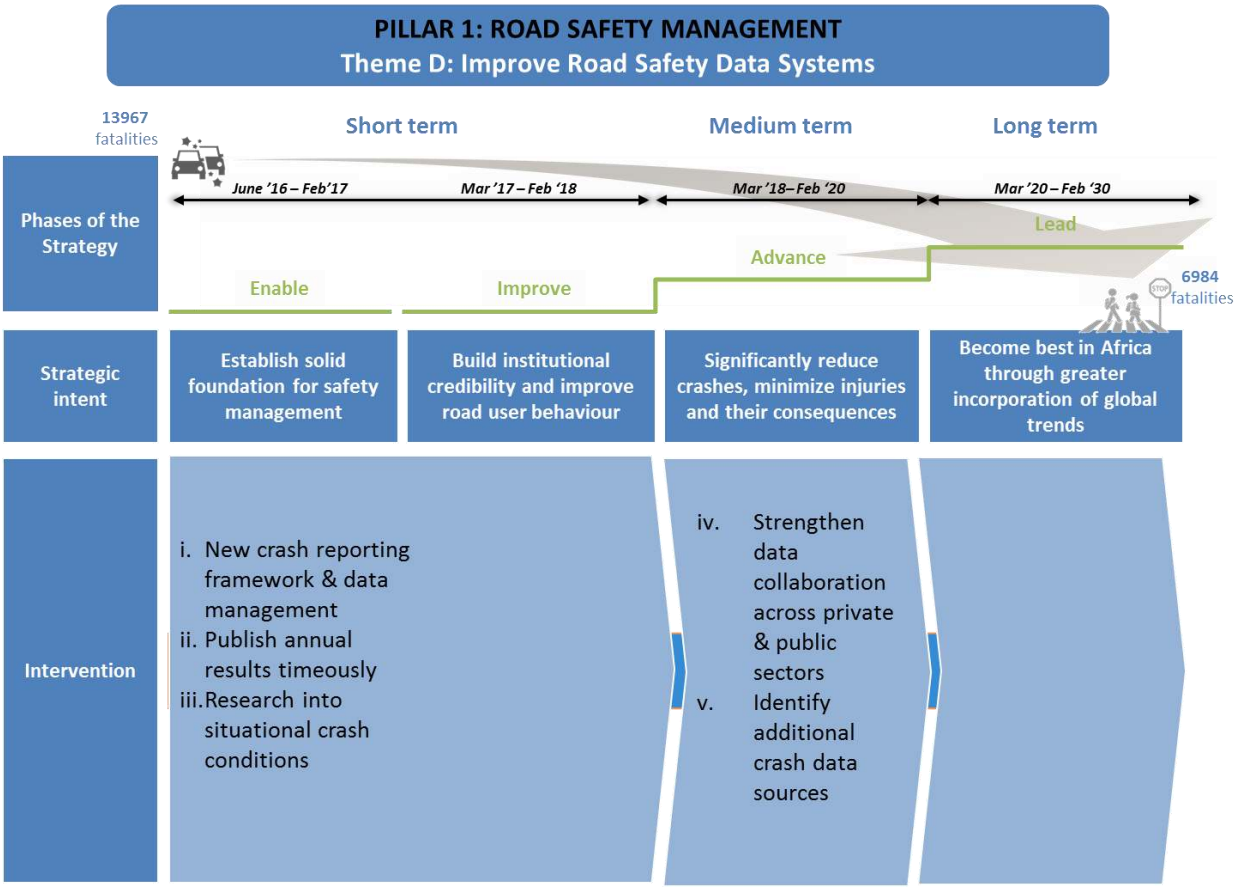
Staffing: The investigation may be contracted to an external service provider with supervision by the RTMC. Existing personnel should be adequate for this exercise to occur.

Specific tasks:

a. Investigation into operation of e-Natis with regards to vehicle licensing.
b. Development of proposals to remedy any deficiencies.
c. Implementation of agreed upon tasks/initiatives to remedy the issue.

1D: Improve road safety data systems

PILLAR 1 Road Safety Management	A. Improve coordination and management
	B. Funding and capacity
	C. Reduce fraud and corruption
	D. Improve road safety data systems
	E. Enhance use of technology



Short term interventions:

1D(i) Improve crash data management
I. Develop a new crash reporting framework for improving the collection and accuracy of data *II.* Improve data quality by training data capturing staff and development of new forms *III.* Ensure that the RTMC is sufficiently resourced to manage crash data collection and reporting on an annual basis
Motivation: Good data is a prerequisite for the development of appropriate road safety interventions, as well as the monitoring of road safety at macro and micro levels. South Africa's crash reporting is inadequate to effectively accomplish this. The RTMC has recently contracted with the Department of Statistics to assist with crash data collection and collation. Despite this intervention, the framework for crash reporting should be reviewed. This includes inter alia the responsible authority for the collection of crash data, the

data forms being utilised, and the collection and storing of the forms/data, protocols to follow up/confirm correctness of data and assimilation practices.

The importance of reliable crash data is critical and should be prioritised by the RTMC. Adequately qualified personnel are pivotal to the provision of this service. Among the many outcomes dependent upon this capability, is the development of post-crash reporting templates for on-scene traffic officials, EMS staff, and ICU staff respectively for more accurate tracking of injury and death due to road crashes.

Timeframe: Immediate

Responsible Organization: RTMC

Cost implication: **MEDIUM**: Specific budget allocation should be made for data enhancement

Staffing: Existing staff supported by additional personnel and external resources

Specific tasks:

a. Review of all data collection, storage and management capabilities, processes, resources etc.
b. Determine the "to be" state based upon strategic and performance requirements
c. Resource accordingly to address existing gaps

1D(ii) Publication of annual statistics to be achieved within 6 months of the following year.

Motivation: Delays in the publication of road safety data poses a serious challenge in soliciting proactive and timeous responses by appropriate road entities. The last official report released publically is the 2011 RTMC Traffic report which includes data from April 2010 - March 2011.

Timeframe: In conjunction with data improvement interventions. Immediate ratification and publication of current data sets.

Responsible Organization: RTMC

Cost implication: Align to outcomes of data improvement interventions.

Staffing: **LOW:** Minimal if aligned to data improvement interventions.

Specific tasks:

a. Align to data improvement interventions
b. Predetermine schedules and target dates for the release of road crash data.
c. While awaiting outcomes, ensure that current data sets are as accurate as possible, verify and publish.

1D(iii) Commission research into situational conditions of crashes (time of day, weather, other vehicles present/involved), which should feed into road safety guidelines.

Motivation: In order to be effective in combating the occurrence of crashes, better knowledge of all local contributing factors is required. This includes the situational circumstances such as the road environment, weather, time of day, etc.

Timeframe: Immediate

Responsible Organisation: RTMC and SANRAL

Cost implication: **MEDIUM:** Funds may be required for expanded research capacity and adequate resourcing. A budget for road safety research should be established and managed by the RTMC. An estimated figure for such a budget is R10-million per annum. A portion thereof (±25%) should be allocated specifically to this subject area.

Staffing: Research work could be outsourced (on a contract basis). The RTMC however, may require some additional capacity (three persons) to manage the research programme. Cost for such a programme is estimated at R3-million per annum.

Specific tasks:

a. Establish a research branch at the RTMC and develop a research programme methodology.
b. Implement research programme.

Medium term interventions:

1D(iv) Strengthen programme to share data across the private and public sector; including the short term insurance industry to discuss the effective use of data to introduce new services and products jointly between the private and public sector

Motivation: Good data is a prerequisite for the development of appropriate road safety interventions, as well as the monitoring of road safety at macro and micro levels. South Africa's crash reporting is inadequate to effectively accomplish this.

Intervention 1D(i) aims to address crash data management issues within public entities and ensure that higher level of certainty and accuracy in data collected, reported and utilised in supporting implementation of interventions effectively. In order to further improve the possible insights, additional sources of data should be identified and incorporated into the data set. These additional data sources may be obtained by partnering with private sector companies as well as other non-governmental organisations involved in road safety.

Timeframe: This should be an ongoing intervention.

Responsible Organisation/s: RTMC and all interested and affected public and private sector parties

Cost implication: **LOW:** Utilise existing staff to collaborate with relevant public and private sector entities

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

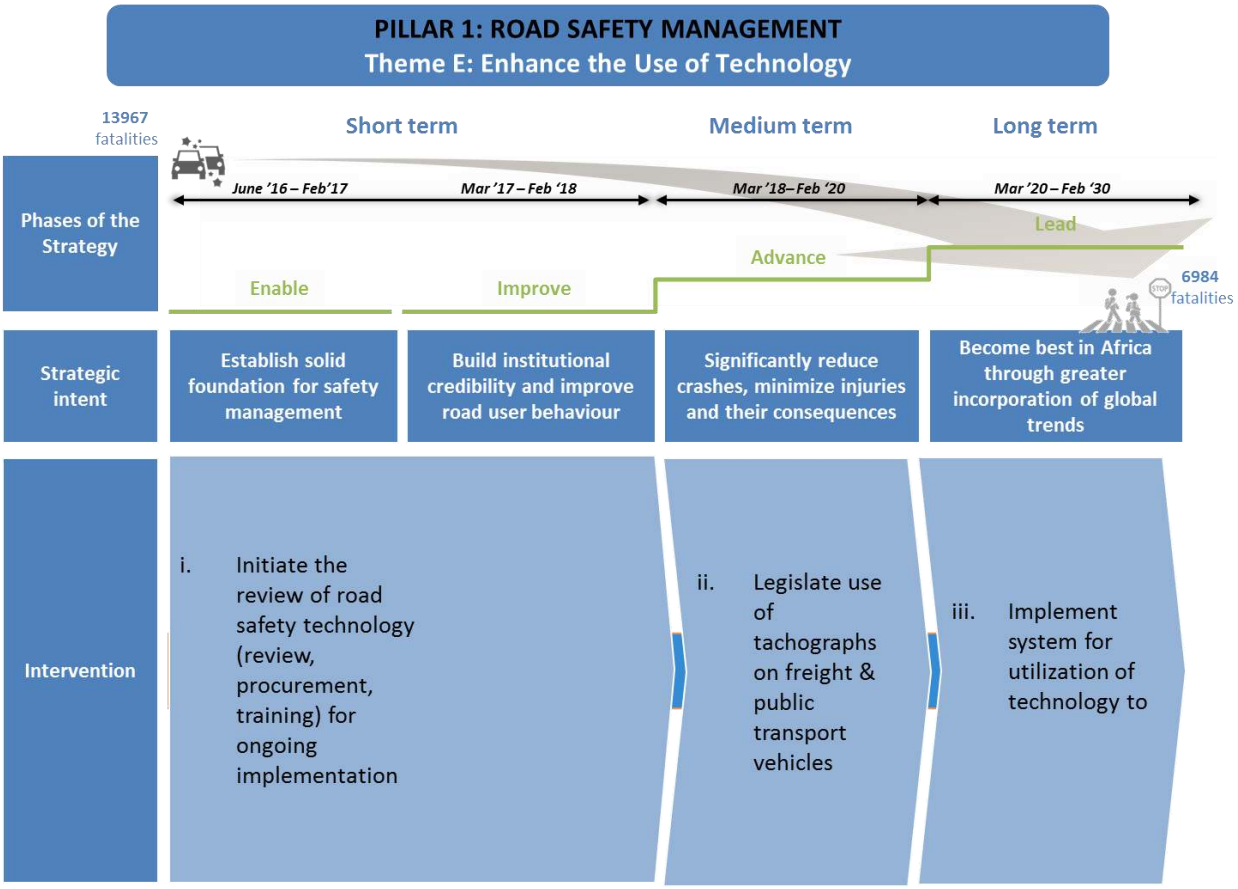
a. Review of all relevant data collected by all parties
b. Determine points of synergy and support integration between organisations with specific regard to data collection, ratification and/or verification, data sharing etc.
c. Develop collaboration teams and initiate the programme

1D(v) Identify availability and potential integration of other crash data sources

a. As per 1D (iii) above. In addition, international agencies for learnings, assistance, etc. should be included.

1E: Enhance THE use of technology

PILLAR 1 Road Safety Management	A. Improve coordination and management
	B. Funding and capacity
	C. Reduce fraud and corruption
	D. Improve road safety data systems
	E. Enhance the use of technology



Short term interventions:

1E(i) Technology review, procurement and training
Motivation: Road safety in South Africa can benefit from the increased use of technology to assist in managing all aspects/components more effectively and efficiently. It can also ensure improved integration of data and the ability to respond more proactively and timeously to various situations in road safety. Timeframe: Immediate Responsible Organisation/s: DoT and RTMC

Cost implication: **MEDIUM – HIGH:** Funds may be required for technology review and implementation of findings.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. Technology review: "As Is"; "To Be" and Gap Analysis including best practise benchmarks
b. Integrate with road safety related private sector practises so as to allow seamless data transfer, verification and handling.
c. Resource appropriate technology accordingly and commence training of road safety personnel.

Medium term interventions:

1E(ii) Legislate use of tachographs for all freight and public transport vehicles

Motivation: Fatigue is a common human factor affecting drivers and often the cause of crashes and deaths on South African roads. Fatigue is notoriously difficult to detect in drivers as there are no proven tests that can be used to deduce sufficient alertness of a driver. International best practice advocates the use of driving hours as a proxy for fatigue. This is monitored by the use of tachographs which record the hours a vehicle has been in operation. Tachographs are used to ensure that drivers adhere to set driving limits (these are established through legislation). Tachographs are a practical and economical way to ensure that drivers have sufficient rest periods and do not drive without a break.

Timeframe: Immediate

Responsible Organisation: DoT, RTMC, RTIA

Cost implication: **MEDIUM**: Legislation could be drafted, completed within existing budgets. Compliance costs would need to be borne by industry and greater society.

Staffing: Training of existing personnel and additional resources to ensure adequate levels of enforcement.

Specific tasks:

a. Tachographs are present in most heavy trucks. It should be a requirement that all trucks and public transport vehicles be equipped with these, so as to ensure monitoring of driving times of drivers.
b. DoT to introduce the necessary changes to Traffic Regulations and law enforcers to be equipped to monitor tachographs.

Long term interventions:

1E(iii) Implement system for utilisation of technology to build a road safety knowledge management system; using information such as Geographical Information Systems, Geolocation, etc.

Motivation: In order to further improve road traffic information, systems currently available may undergo further upgrading. As technology advances it is likely that data gathering and management capabilities improve. The crash recording system needs to optimize the use of technology across various functions of road safety.

Timeframe: This should be an ongoing intervention.

Responsible Organization: RTMC, Provincial and Local Government

Cost implication: **HIGH**: Funds may be required for improved technologies and training of staff.

Staffing: External service providers for technology and system implementation along with suitably trained existing capacity

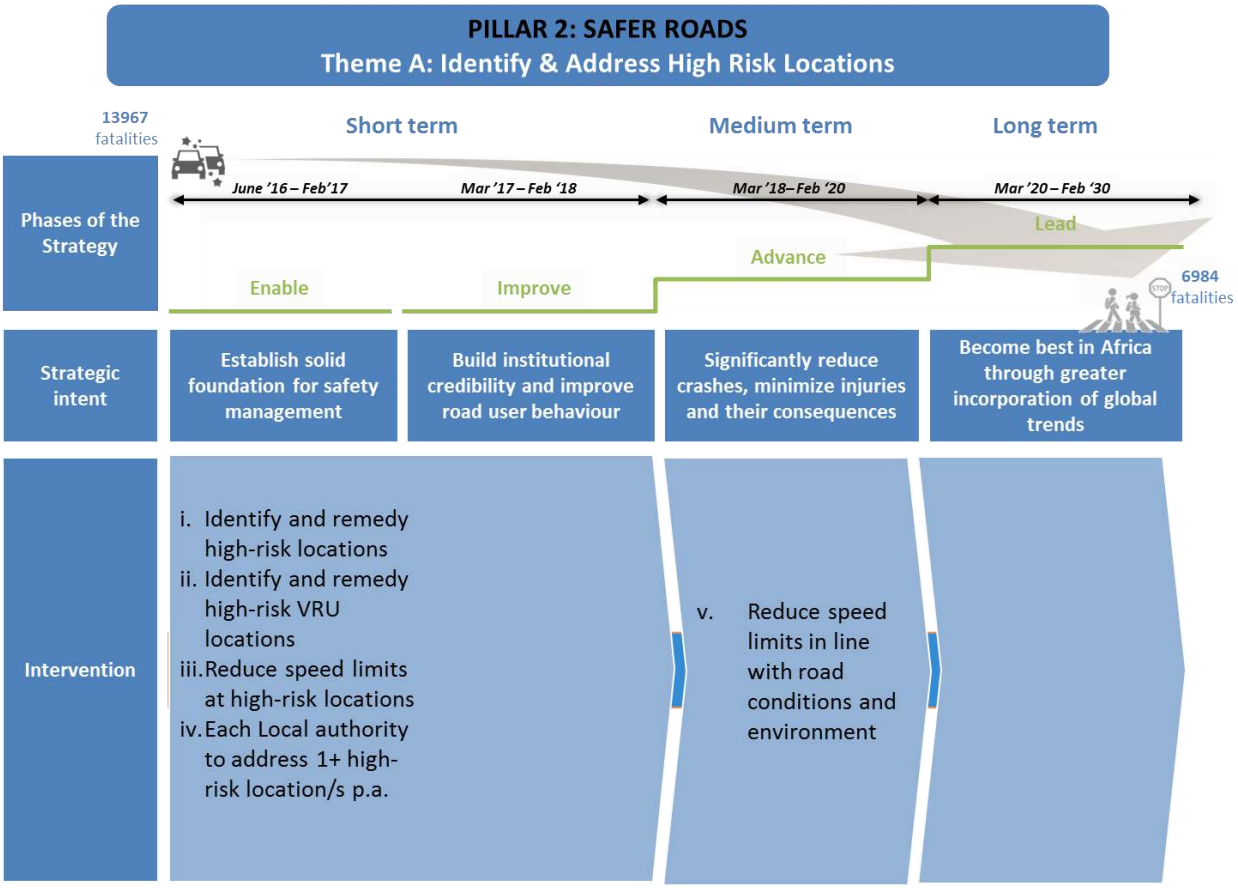
Specific tasks:

c. A follow-through from 1E(i) above.
d. A system is currently in place for the collection of crash data. The RTMC should continually ensure that data being collected is relevant to the improvement of road safety in SA. The RTMC unit responsible for this task should continuously evaluate the value of data received and identify improvements that should be implemented.
e. New technology should be enlisted to assist in improving the efficiency and effectiveness of Road Safety interventions.

a. Safer Roads

2A: Identify and address high risk locations

PILLAR 2 Safer Roads	**A. Identify and address high risk locations**
	B. Provide a self-explaining and forgiving road environment for all road users
	C. Regular road safety audits



Short term interventions:

2A(i) Continuously identify hazardous/high risk road locations and remedy with focused interventions
Motivation: With high levels of road crashes occurring in concentrated areas, the possibility exists to investigate the reasons therefore in order to address underling issues with focussed interventions. All road authorities/agencies should identify, investigate and address key locations on their road network where crashes occur regularly on a continuous basis. In addition, the effectiveness of interventions to address these locations should be monitored and results report to the RTMC. Timeframe: Immediate with continuous implementation

Responsible Organisation: RTMC, together with road authorities across all levels.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a) SANRAL, the nine provinces and all the metros should be proactive in identifying high risk locations, investigating reasons for crashes occurring and developing appropriate interventions to address these risks to VRUs on roads within their respective jurisdiction.
b) Respective road authorities should develop a list of its highest priority hazardous locations specifically for VRU's, for systematic attention. The monitoring unit of the RTMC should have access to this list and monitor progress with annual upgrades/improvements. Progress should be reported within the RTMC annual report.

2A(ii) Identify top VRU hazardous/high risk locations on a continuous basis and address them.

Motivation: A large number of road fatality victims in South Africa are pedestrians and other vulnerable road users. Therefore, disparity areas showing specific dangers to VRUs should be addressed as high priority. The identification and amelioration of even one such location for each road authority will begin the process of regularly and increasingly addressing the challenges prevalent at these particular sites.

Timeframe: Immediate with continuous implementation

Responsible Organisation: RTMC, together with roads authorities across all levels.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a) SANRAL, the nine provinces and all the metros should be proactive in identifying high risk locations, investigating reasons for crashes occurring and developing appropriate interventions to address these risks to VRUs on roads within their respective jurisdiction.
b) Respective road authorities should develop a list of its highest priority hazardous locations specifically for VRU's, for systematic attention. The monitoring unit of the RTMC should have access to this list and monitor progress with annual upgrades/improvements. Progress should be reported within the RTMC annual report.

2A(iii) Reduce speed limits at high risk locations

2A(v) Review speed limits across the road network in line with road conditions and environment (medium term)

Motivation: Best practice research on countries successful in the reduction of road fatalities has included the reduction of speed limits as a key action area. Research confirms that impact speed is the leading indicator of the survivability of a crash, affecting not only the amount of energy that is released (and hence the damage and injury sustained) but in addition thereto, the stopping distance of a vehicle, which increases exponentially with speed. Impact speed is particularly important for pedestrians: a speed of ±38 km/h is the speed at which an impact is

likely to change from survivable, to fatal (see graph below which compares research results from three different studies).

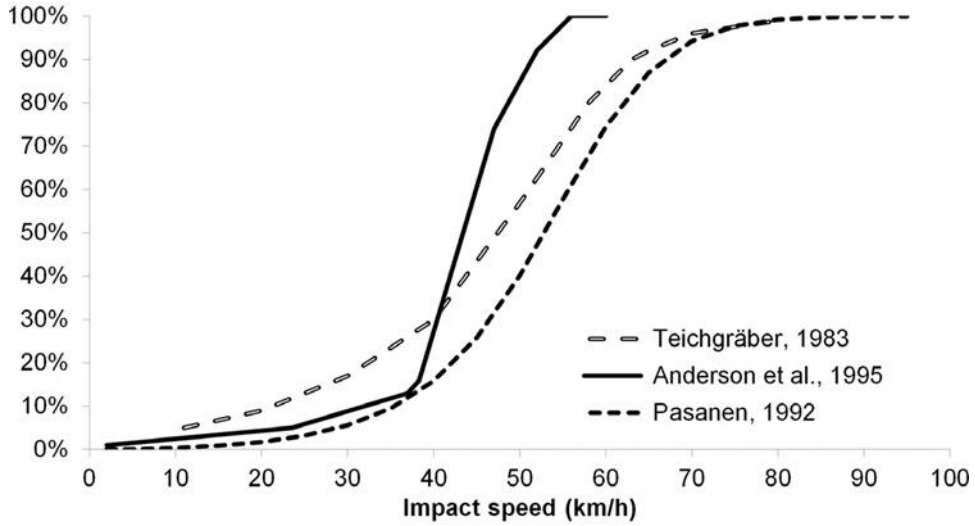


Figure 1: Pedestrian risk of death (in percentage) by speed at impact

Indications from international experience and international research are that an urban 60 km/h limit (on all roads) is too high, for all road users. Countries/cities that have reduced their limit to 50km/h (selected lower order roads) have seen significant reductions in fatal crashes. The international norm for lower order roads is 50 km/h, with areas of concern reduced to 30km/h (for example around schools or old-age homes, or in neighbourhoods where children utilise the streets as pedestrians, cyclists etc.). This creates a distinction between everyday speeds and areas where drivers must pay even more care and attention.

Leading nations in respect of road safety, such as Australia, have also reduced speed limits on freeways and intercity routes to 100 km/h or 110 km/h at the highest. The widely applied 120 km/h speed limit on intercity routes in SA should be reviewed. Any reduction should be enforced effectively; as the available data shows that the current 120 km/h is exceeded by approximately 15% of motorists. The same is applicable to truck speeds.

Timeframe: This should be an ongoing intervention.

Responsible Organisation: DoT, RTMC and all road authorities

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore little to no additional funds are required.

Staffing: RTMC to lead with a dedicated core group. Education delivery may be outsourced or run in-house.

Specific tasks:

a) All roads authorities should investigate the applicability of existing speed limits at their top hazardous locations, with the objective of ensuring that they are fit for the circumstances. RTMC to perform monitoring function. This action is specifically relevant to locations with high numbers of pedestrians.

2A(iv) Each local authority to identify and address at least one high risk pedestrian location annually

Motivation: All road authorities should be aware of key locations on their road network where pedestrian crashes occur regularly. The identification and amelioration of even one such location for each road authority will begin the process of regularly and increasingly addressing the challenges prevalent at these particular sites.

Timeframe: Immediate and ongoing

Responsible Organisation: RTMC and all roads authorities

Cost implication:. **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

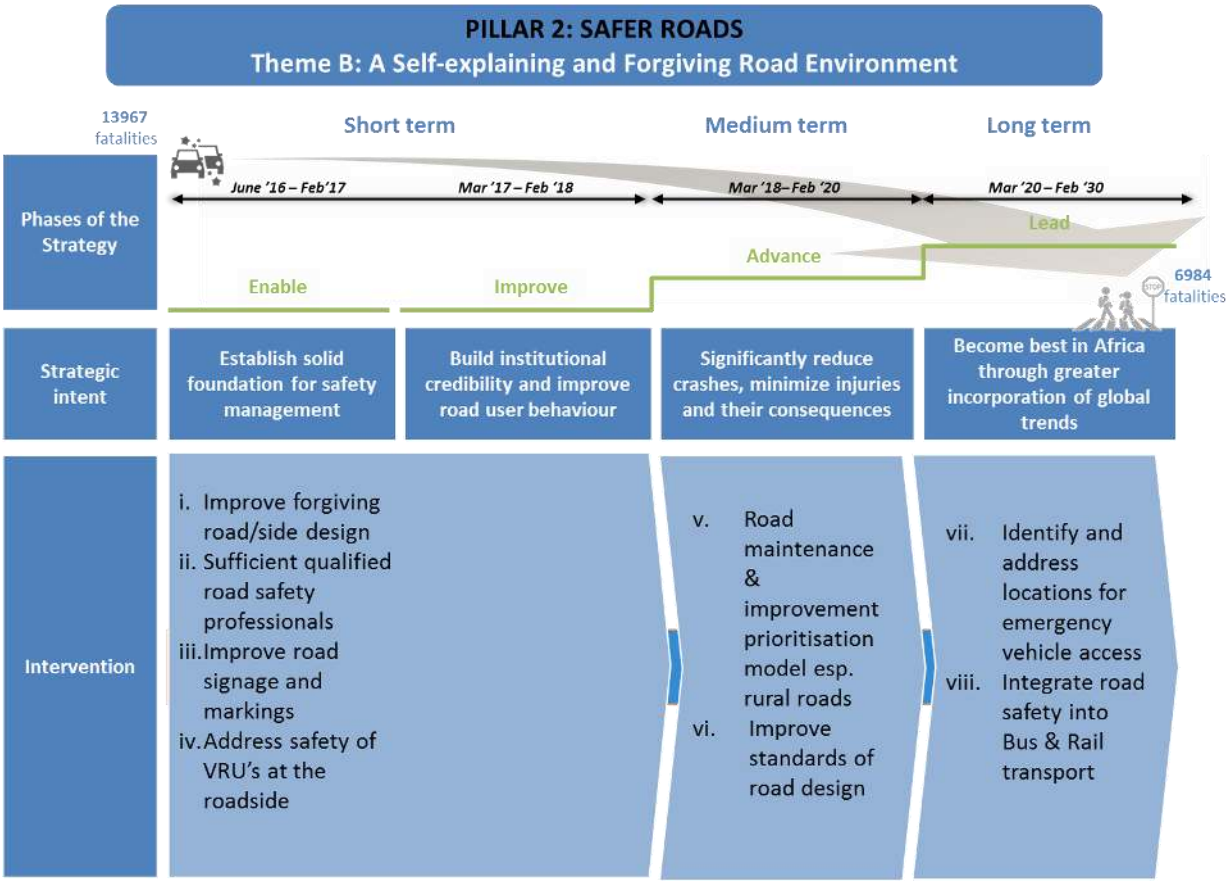
Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a) SANRAL, the nine provinces and all the metros should be required to identify at least one hazardous location for pedestrians (or other VRU's) on a road in their jurisdiction, which will be improved/upgraded/made safer. Other local authorities in the country should be requested to start with a process of identifying hazardous locations for VRU's. The practice of eliminating one or more hazardous locations should continue thereafter on an annual basis. The RTMC should monitor progress and report in their annual report.

2B: Provide a self-explaining and forgiving road environment

PILLAR 2 Safer Roads	A. Identify and address high risk locations
	B. Provide a self-explaining and forgiving road environment for all road users
	C. Regular road safety audits



Short term interventions:

2B(i) Improve the forgiving nature of roadside design
Motivation: Whilst SA road design is based on global best practice; efforts should always be made to improve safety features, especially in view of the Safe Systems Approach. Road Safety audits should specifically focus on identifying dangerous elements close to the roadway. Maintenance of forgiving elements such as guard rails or other protective measures on the road should be at the highest level possible. The public could be invited to suggest locations where they consider improvements to be justified. Timeframe: This process should be ongoing. Responsible Organisation: RTMC, together with roads authorities on all levels. Cost implication: **MEDIUM:** This should be possible within existing budgets although at specific locations additional funding may be required. Road authorities should be required to dedicate a portion of their existing budgets for this purpose. Staffing: Capability for this intervention exists within current capacity. Specific tasks: a) Road authorities to be requested to revisit design standards to check roadway safety requirements. b) Road safety audits to be conducted to ensure that roadway safety elements comply with standards.

2B(ii) Employ adequately experienced and qualified staff to support upskilling and training of staff

Motivation: In order to ensure the quality of engineering and design is at the highest standard, sufficient skill and experience is required. Not all road authorities have sufficient expertise in road safety to adequately address the challenges. A centralised body of experts would provide much needed advice and direction until capacity levels are improved. This body could be made up of retired experts/road safety/authority personnel.

Timeframe: Six months

Responsible Organisation: SAICE/RTMC

Cost implication: **LOW - MEDIUM:** Minimal funds are required to create the list of retirees. Employment of professionals to be done under existing budgets.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. SAICE should be requested by the RTMC to provide a list of adequately experienced road safety professionals (including retirees) that are available to provide assistance to road authorities on improving staff skills as well as the support of implementing interventions. List to be provided to RTMC for distribution to all relevant national, provincial and local road authorities. These authorities to be requested by RTMC to make use of such persons where applicable.

b. Authorities to prioritise the filling of critical vacancies.

2B(iii) Ensure application of road signage and road markings standards are effectively applied.

Motivation: High standards for the visibility and provision of road signs and markings exist (South African Road Traffic Signs Manual). Research done during the previous (RDAC) research program of the DoT (two decades ago), indicated that many markings and signage did not comply with the set standards. This situation has deteriorated, particularly in rural areas and there is a strong need to identify problem areas and rectify the situation. Given that more than 50% of road deaths occur at night, particular effort is required to ensure night time visibility of signs and markings.

Timeframe: Immediate

Responsible Organisation: RTMC and roads authorities on all levels.

Cost implication: **MEDIUM:** Funds may be available in existing budgets for maintenance of these elements but additional funds may be required for replacement and upgrades. It is possible that funding is inadequate and that additional budgets should be made available. Further research is required to determine the extent of additional funding required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. RTMC to request that all road authorities report on the situation with regard to road signs and markings on the roads within their jurisdictions on an annual basis, as well as the activities/interventions being implemented to improve adequate, compliant road signage and markings.

2B(iv) Conduct research into addressing safety of hawkers and other pedestrians at the roadside

Motivation: The presence of hawkers and other pedestrians between vehicles at busy (mostly signalised) intersections is considered unacceptable from a traffic safety viewpoint. Traffic police turn a blind eye to this activity, either intentionally or through ignorance. Research is required to confirm whether it is a serious problem that warrants stronger action.

Timeframe: Research may begin immediately for implementation of remedial action in three years

Responsible Organisation: RTMC

Cost implication: **LOW:** Research effort estimated at R1-million. Probable integration with existing by-laws would incur a cost.

Staffing: Can be contracted out with RTMC supervision.

Specific tasks: Research effort with appropriate action based on findings.

Medium term interventions:

2B(v) Develop and implement a road improvement and maintenance prioritisation model (with focus to rural roads based on information driven strategic data

Motivation: Road and roadside maintenance, particularly in rural areas, is not completed to acceptable standards. Furthermore, the size of the maintenance backlog is indicative of the scale of the problem confirming that not all maintenance can be addressed immediately. To effectively address and ensure sustainable ongoing maintenance programmes are possible, development and implementation of a maintenance prioritisation model is required.

Timeframe: Development of the model may begin immediately for implementation in 3-5 years.

Responsible Organisation: COTO with the assistance of SANRAL.

Cost implication: **MEDIUM – HIGH:** Development of the model estimated at R3-million.

Staffing: The development of the model may be contracted out, but guidance from officials from the organisations previously mentioned will be required.

Specific tasks:

a) Development of road maintenance prioritisation model
b) Training and implementation of the model at all road authorities where required
c) Monitoring of performance by lead agency, RTMC

2B(vi) Improve standards for road design by focusing on layout format and physical design to ensure all road users are optimally protected

Motivation: Whilst SA road design standards are based on global best practice, efforts should be made to improve safety features, especially in view of the Safe Systems approach. Standards for the protection of both VRU's and motorists should be reviewed and adjusted where required from a road safety perspective.

Timeframe: The process may begin immediately for implementation in 3 -5 years.

Responsible Organisation: RTMC to request COLTO to proceed with the review of existing design standards, as well as the Road Safety Manual. SANRAL, provincial roads departments and local authority road departments to be involved.

Cost implication: **MEDIUM:** Possibility to be covered within existing budgets, given that an amount of R5-million be apportioned hereto.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with a contracted team of professionals.

Specific tasks:

a. A number of geometric design guidelines are being used by road authorities in SA. A Draft Road Safety Manual was produced by COLTO in 1999, which introduced the concept of Road Safety Audits. All of these documents should be reviewed and updated by COLTO to ensure that road design standards are in line with the road safety requirements needed for SA conditions (specific attention to vulnerable users and road workers).

b. In addition, all road authorities should be requested to do a review of their geometric design guidelines, with specific reference to adequate allowance for road safety measures. Road design should always be tested with the principle of a "Forgiving Road".

Long term interventions:

2B(vii) Identify locations and improve road design for crash access for emergency vehicles

Motivation: Often referred to as the golden hour, timeous and efficient first response to victims of road crashes is paramount to ensure the reduction of the road fatality rate. Accessibility of emergency vehicles to support victims of road crashes are often impeded by the presence of physical barriers (mostly) on the median of major roads, such as freeways. In order to ensure these post-crash response services are timeous, this matter should be investigated as part of road safety audits and/or identification, to ensure that access to any location on a major road can be achieved from any direction speedily and easily. Where an issue is identified, remedial actions should be implemented.

Timeframe: This action may be completed in the next five years.

Responsible Organisation: Road authorities at all levels.

Cost implication: **MEDIUM:** This may be done as part of normal (or new) audit actions. Where physical construction is required to improve a problematic situation, it could be phased in within maintenance budgets.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks: Road safety audits, identification of remedial action and implementation thereof.

2B(viii) Integrate road safety into bus and rail transport services

Motivation: A high proportion of personal trips in South Africa are made using public transport services on the road and rail network. The National Household Travel Survey of 2013 found that approximately 40% of worker trips were completed by the use of public transport (estimated at 5.4 million person trips/weekday), 40% by private transport and 20% by walking. As all of these persons at some point have had to use the road network to access public transport, integration

of road safety and public transport services is crucial. It is suggested that the review of the existing SA Road Safety Manual includes guidelines on the integration of road safety and public transport services/facilities.

Timeframe: Immediate

Responsible Organisation: RTMC

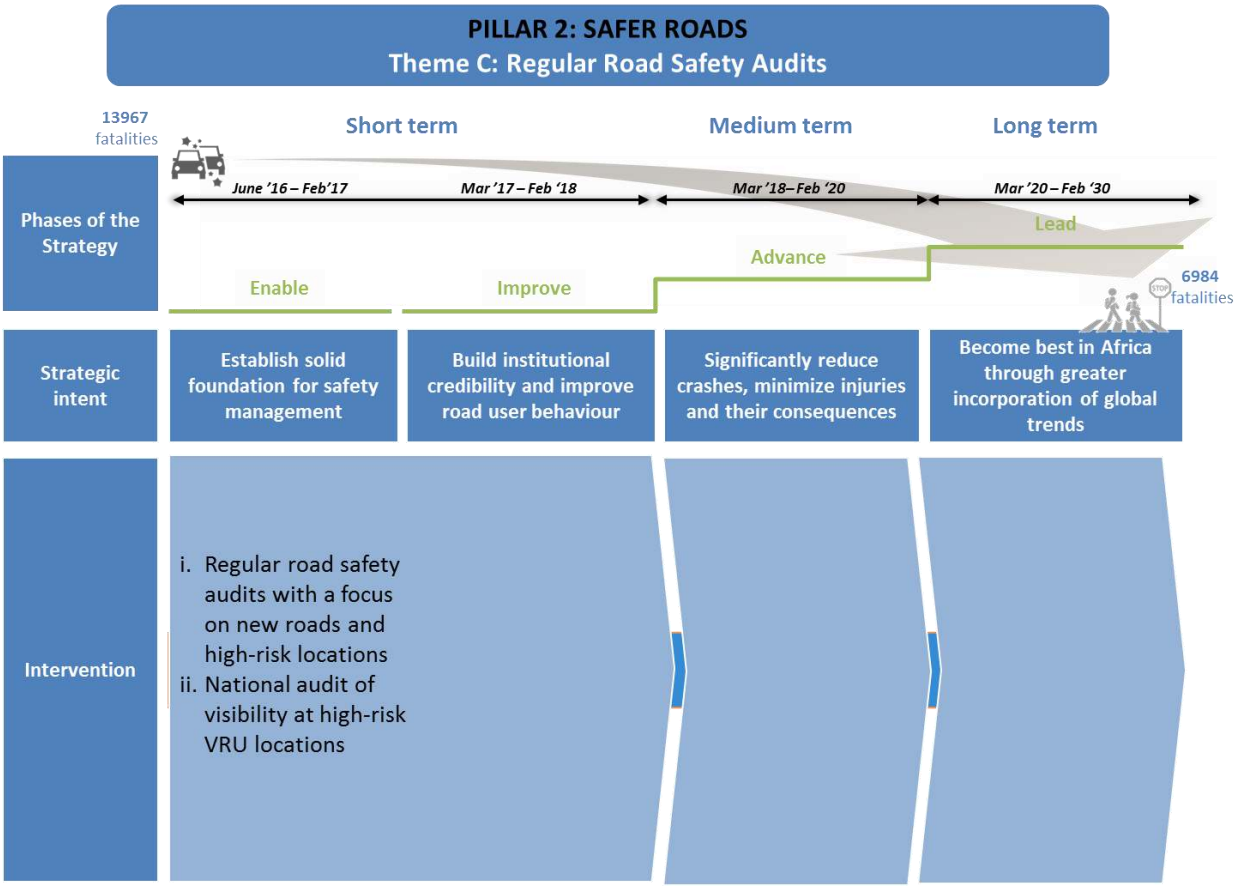
Cost implication: **MEDIUM – HIGH:** Cost for review of the Road Safety Manual estimated at R2-million. Implementation of corrective measures would require considerable resources dependant on audit findings.

Staffing: The investigation may be contracted out, with supervision by the RTMC. Adequate existing personnel would be required.

Specific tasks: As described above.

2C: Road Safety Audits

PILLAR 2 Safer Roads	A. Identify and address high risk locations
	B. Provide a self-explaining and forgiving road environment for all road users
	C. Regular road safety audits



Short term interventions

2C(i) Legislate and roll out road safety audits for all new roads, and road safety assessments for existing high-crash roads in the medium term

Motivation: In order to ensure that road environments are safe for all road users it is required to firstly ensure that new roads are designed in such a way and secondly that all existing roads are evaluated to meet required standards.

A road safety audit is a process completed during the initial design phase of road infrastructure projects, in which designs are peer-reviewed by road safety engineers to ensure that safety concerns are adequately addressed. Although this process is used in some projects it is not currently a legislative requirement. Road safety assessments aim to identify safety shortcomings in the current road infrastructure and address them in a regular and systematic manner.

Both road safety audits and road design audits are a legal requirement for all road authorities.

Timeframe: Immediate

Responsible Organisation: RTMC, together with road authorities at all levels.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

1. Responsible municipalities to complete Road safety assessments for identification of high risk locations as well include road safety audits in the process of new road development
2. Review current legislation regarding the design and evaluation of current road environment elements to identify the changes required to complete.
3. Initiative and implement changes in legislation to make it mandatory for both road safety audits and road design audits.

2C(ii) National audit of visibility at high risk pedestrian locations

Motivation: There is a need to identify hazardous locations with respect to VRU's and pedestrians in particular. The regular and systematic completion of road safety audits should be a legal requirement for all road authorities, targeting known high risk locations in the short-medium term.

Timeframe: Immediate

Responsible Organisation: RTMC, together with roads authorities at all levels.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

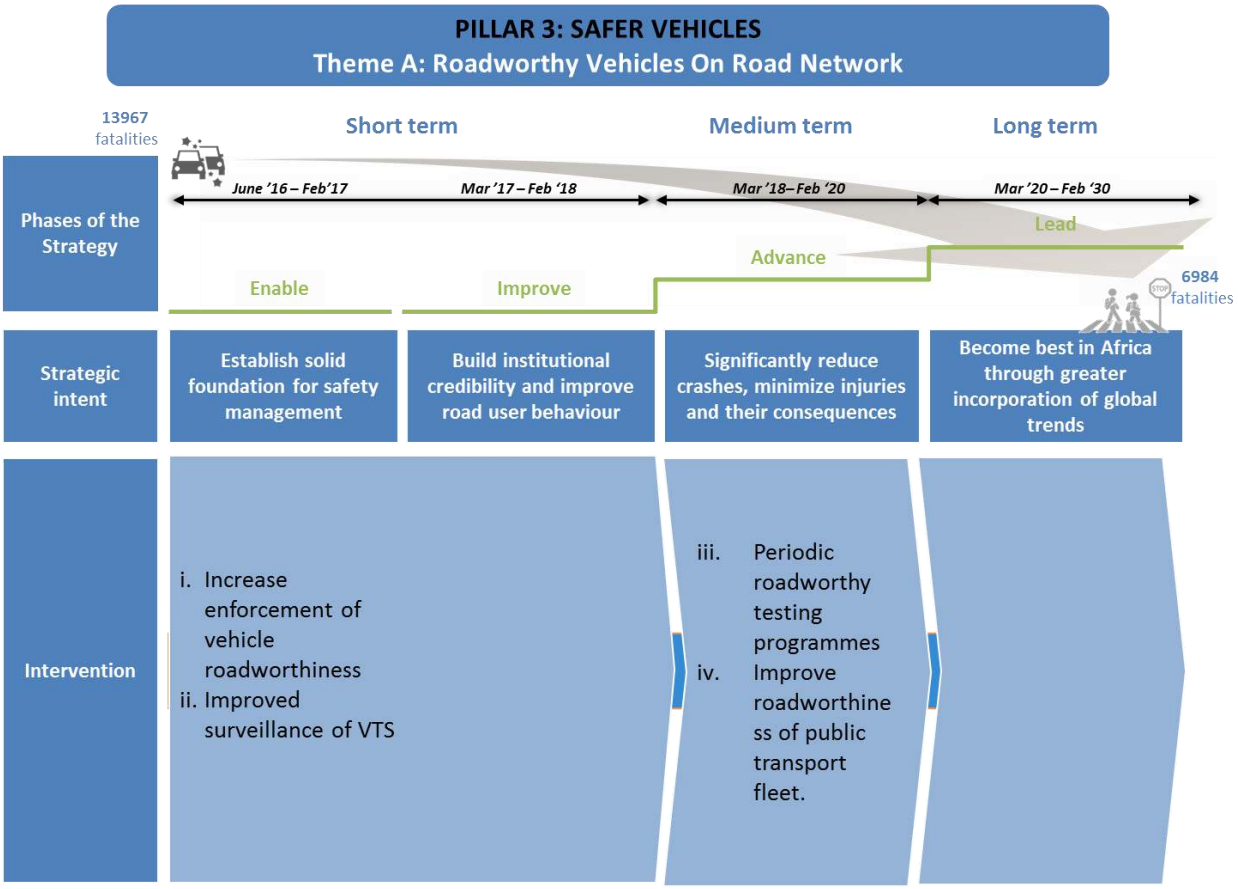
Staffing: Capability for this intervention exists within current capacity.

Specific tasks: Road safety audits, identification of remedial action and implementation thereof.

b. Safer Vehicles

3A: Roadworthy Vehicles on road network

PILLAR 3 Safer Vehicles	A. Ensure vehicles on road network are roadworthy
	B. Increase vehicle safety standards



Short term interventions:

3A(i) Immediately increase traffic enforcement around vehicle roadworthiness
Motivation: South Africa has established roadworthiness standards that stipulate the minimum requirements needed for vehicles to adhere to in order to be considered safe for operation on the road network. Safety requirements include various aspects of road safety including amongst others: breaking system; overloading; tyre tread; vehicle visibility (lights and reflectors); and the inclusion of basic vehicle safety features such as safety belts. The adherence to the road safety standards however, is questionable with prevalence of non-roadworthy vehicles on the road network. Poor roadworthiness plays a causal role in number of crashes, as is especially concerning with regards to freight and public transport vehicles that pose a risk due to the potential damage/harm to both passengers of these vehicles and other road users. The occurrence of non-roadworthy vehicles may also be partially attributed to behavioural and educational issues as people are unaware of the dangers and implications of non-roadworthy vehicles. In order to ensure all vehicles on the road are safe, increased enforcement aims to

remove non-roadworthy (and therefore unsafe) vehicles from the road and deter road users from utilising unsafe vehicles.

Timeframe: Higher levels of enforcement should start immediately.

Responsible Organisation: RTMC and all traffic police departments at all levels.

Cost implication: **MEDIUM:** Extra manpower and training to ensure adequate enforcement

Staffing: This could be done by existing personnel where possible. Some traffic departments might require additional capacity and training. RTMC to co-ordinate.

Specific tasks:

a. Complement existing personnel and equip with adequate training to enable them to identify and enforce non-roadworthiness of vehicles.
b. Intensify the level of enforcement of agencies of vehicle roadworthiness through policing by active programmes and passive engagements with road users.
c. Non-compliant vehicles to be removed from the road network and scrapped or repaired.

3A(ii) Improved surveillance of vehicle testing stations to combat corruption and ensure that vehicle testing is robust

Motivation: Vehicle testing stations aim to ensure that vehicles tested conform to roadworthiness requirements. Public feedback, press reports and ad-hoc visits by senior government officials, clearly confirm the existence of corruption where vehicle testing and driver licensing is completed and thus allow some non-roadworthy vehicles to be awarded roadworthiness certificates and entry onto the road network. Improved surveillance and checking of procedures at all testing stations are required to address this matter and ensure standards are addressed. Both officials and members of the public partaking in such activities should be prosecuted to the fullest extent of the law.

Timeframe: Immediate

Responsible Organisation: RTMC, in collaboration with all traffic departments.

Cost implication: **MEDIUM – HIGH:** Possibility of additional resourcing. Figure unknown at this stage, may range between the order of R50 - R100 million per annum.

Staffing: Additional personnel likely to be required at traffic departments to conduct regular monitoring and surveillance.

Specific tasks:

a. Identify and list all vehicle testing stations including information regarding number and types of vehicles tested.
b. Prioritise testing stations based on vehicle type (public transport/freight) and quantity of vehicles tested.
c. Improve surveillance and non-scheduled inspection of vehicle testing stations including quality of testing practices.
d. Prosecution of all transgressing parties.

Medium term interventions:

3A(iii) Implement periodic roadworthy testing program for all vehicles as well as specifying incremental checks for public transport vehicles

Motivation: Prevalence of unroadworthy vehicles on the road poses a danger to all road users. Older vehicles are considered to be more likely to be non-roadworthy than newer ones largely due to the fact that many new vehicles' service and warranty plans terminate between 3 and 5 years. This often results in vehicle owners not maintaining their vehicles to manufacturer's requirements or in some cases not maintaining them at all. This results in vehicles becoming non-roadworthy over time. There appears to be a tendency by some not to adhere to the maintenance intervals/schedules/requirements particularly on heavily used freight and public transport vehicles to the detriment of road safety which poses significant danger to other road users.

Timeframe: Immediate but may require two years to implement.

Responsible Organisation: DoT

Cost implication: **LOW:** Investigation into appropriate strategies may be conducted by and within existing structures.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. Investigate the most appropriate approach including the economic implications as well as the requirement for upgraded and/or additional infrastructure. This investigation should investigate the need for amendment to the Road Traffic Regulations to include this requirement.
b. Engage and implement changes to the Road Traffic Regulations to legislate periodic roadworthiness tests for all vehicles.
c. Implement the requirements for the periodic testing of vehicles.

3A(iv) Improve the roadworthiness of the Public Transport vehicle fleet

Motivation: The National Household Travel Survey showed that many South Africans use public transport for their transportation needs on a daily basis. However, crashes involving public transport vehicles (including mini-bus taxis) are common posing risks to both passengers and pedestrians from public transport vehicles. In order to effectively address this a integrated view and strategy for public transport needs to be established and implemented

Timeframe: Safety of the public transport fleet to be improved in the short term.

Responsible Organisation/s: RTMC and DoT

Cost implication: Unclear at this stage but expected to be **MEDIUM - HIGH**

Staffing: Unclear at this stage

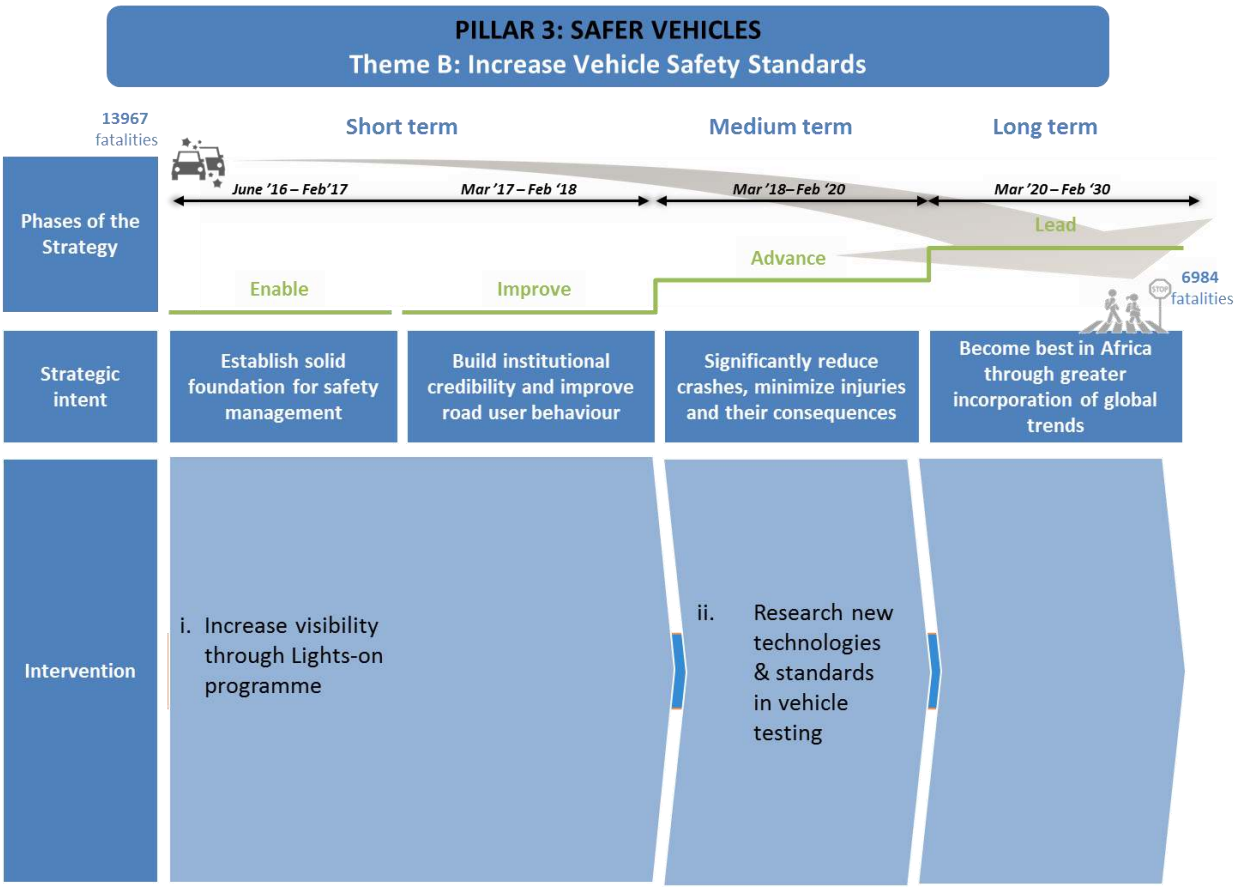
Specific tasks:

a. Prioritise public transport as the key government intervention by implementing an integrated public transport strategy that focuses on streamlining operations and routes, and ensuring that the sector is compliant with road safety standards.
b. Collaboration with taxi associations to introduce road safety awareness and educational programmes that focus on the driver, the commuter, and vehicle fitness.
c. Seatbelts to be mandatory on all public transport vehicles.
d. Security concerns alleviated at terminals and pedestrian interchanges.
e. Speak out campaign: Taxi passengers and scholars to be empowered to speak out against aggressive or dangerous drivers.

f. Maximum driving hours to be legislated for minibus taxi and public vehicle drivers. g. Regarding scholar transport, all scholar transport must provide seatbelts in sufficient numbers.

3B: Improve Vehicle Safety Standards

PILLAR 3 **Safer Vehicles**	A. Ensure vehicles on road network are roadworthy
	B. Increase vehicle safety standards



Short term interventions:

3B(i) Enhance visibility of vehicles through "Lights-On" program
Motivation: Driving vehicles with dimmed or daytime driving lights turned on during the day has been introduced in a number of countries, as it was shown to be beneficial in terms of the visibility of vehicles. Driving with lights on, irrespective of the time of day, should be obligatory and the necessary change to traffic regulations should be introduced. In addition, the requirement for all new vehicles to include automatic daytime running lights as standard should also be considered. A number of vehicles sold have already included daytime running lights as a safety feature. Timeframe: Process may begin immediately, legislation in medium term. Responsible organisation: DoT

Cost Implications: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Manpower Implications: Capability for this intervention exists within current capacity.

Specific tasks:

a. Preparation and implementation of new traffic regulations.
b. Educate vehicle buyers on available safety features in vehicles and make then safety features
c. Review, consult and implement changes to incorporate automatic daylight running lights into vehicle standards.

Medium term interventions:

3B(iv) Research new technologies in vehicle testing, and set standards to internationally acceptable levels including the use of latest technology (e.g. dashcams, tachometers)

Motivation: Standards and technologies related to vehicle testing should be according to global best practice. Research should be done to ascertain whether this is still the case and whether improvements are required.

Timeframe: This can be done in medium term, ideally during the next three years.

Responsible Organisation: DoT

Cost implication: **LOW:** Research can be done within existing budgets.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance where necessary.

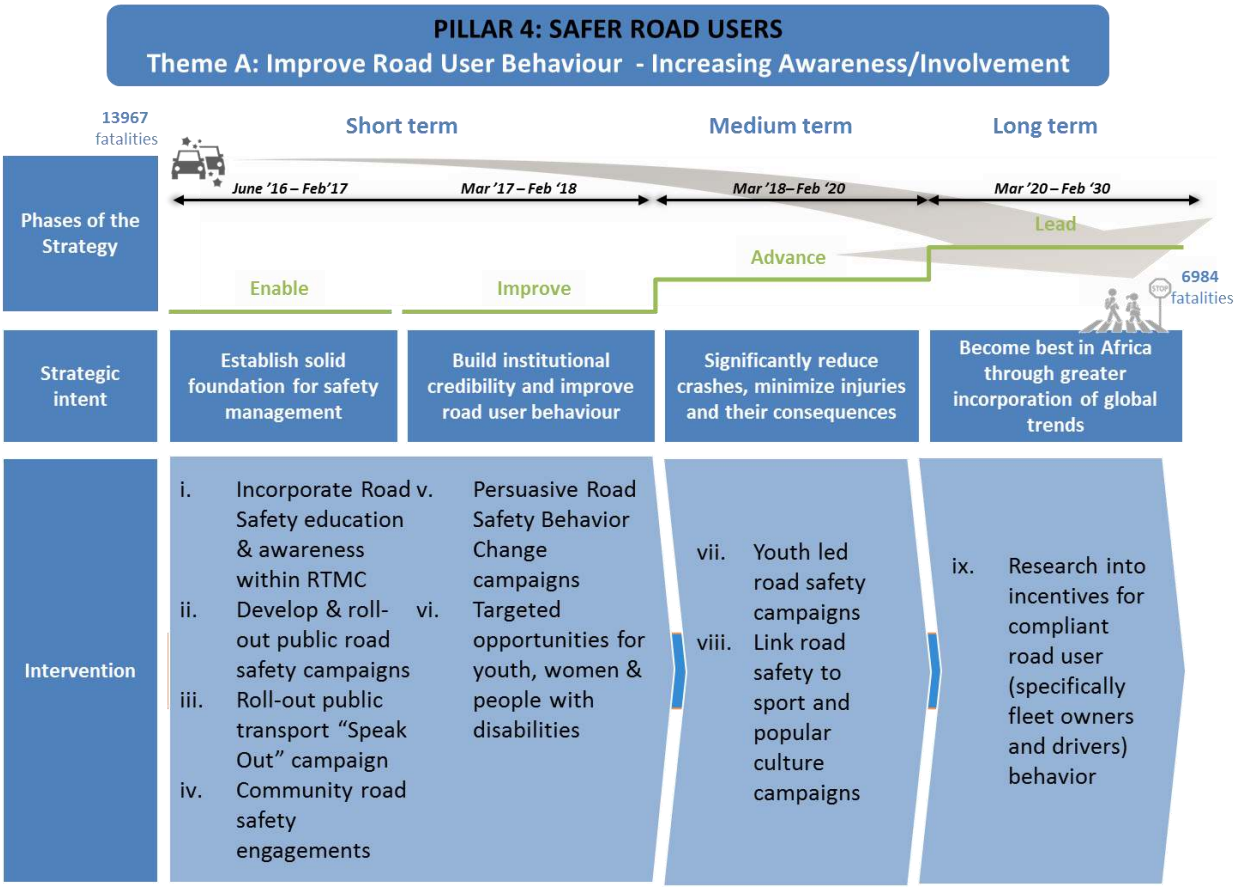
Specific tasks:

a. Research into standards and technologies related to vehicle testing.
b. Development of proposals to remedy any deficiencies and ensure safety systems are implemented
c. Establish forums to research new technologies opportunities for SA

c. Safer Road Users

4A: Improve road user behaviour – increasing awareness/involvement

PILLAR 4 **Safer Road Users**	**A. Improve road user behaviour - Increasing awareness/involvement**
	B. Improve road user behaviour - Increase education & training
	C. Improve enforcement effectiveness
	D. Increased protection for VRU's



Short term interventions:

4A(i) Incorporate road safety education and awareness directly under the co-ordination of the RTMC

Motivation: Road user behaviour can be addressed through (1) education aimed at teaching road users road laws and road safety principles, or (2) enforcement aimed at discouraging poor user behaviour by fear of punishment or awareness campaigns aimed at fostering social cohesion to road safety and re-enforcement of both education and law enforcing elements.

Successful road safety education and awareness strategies include a concise, impactful and co-ordinated message coupled with effective reiteration over a long period. To replicate such impact, a similar type of awareness campaign should be developed and effectively co-ordinated for implementation.

With many different provinces and agencies currently conducting their own awareness and education campaigns this focus may not be possible at the moment. To ensure success however, similar road safety education and awareness programs need to be directly co-ordinated by a single party and shared and communicated countrywide.

Timeframe: 6 months

Responsible Organization: RTMC and DoT

Cost implication: **LOW:** Sufficient funds exist within the RTMC and DoT, and should be identified and merged specifically for road safety education and awareness.

Staffing: Personnel should be of particular high calibre in terms of credentials and experience. Individuals should have training in education and or marketing and past experience of successful delivery of road safety or similar public awareness campaigns.

Specific tasks:

a. Agree on a national calendar of road safety campaigns.
b. Budget, develop and rollout high impact national television and radio campaigns.
c. Support research and development into successful behavioural change campaigns.
d. Provide support to provincial and local authorities regarding rollout of local campaigns.
e. Operate as a Public Information Centre for road safety and a Communications Centre for the coordination of all road safety campaigns. This will ensure a consistency of messages and alignment to national objectives.
f. The first real task of the centre should be to benchmark existing public knowledge, opinions and attitudes towards road safety through a widespread survey of the South African public.

4A(ii) Co-ordination of public awareness campaigns - Develop and rollout public education campaigns (Focus on speed, seatbelt use and drunk/drug-driving, distracted driving behaviour)

Motivation: Based upon international experience and extensive research it is evident that many of the problems associated with crash causation can be successfully addressed through social marketing (adult media-based education campaigns). Research indicates that social marketing campaigns have increased knowledge and awareness of road safety issues and elevated the level of debate around the topic by stimulating discussion.

Effective social marketing in road safety requires skilled personnel and a key understanding of behavioural change. Importantly, research confirms that mass media campaigns should be used with the support of other methods of community persuasion, such as enforcement, education campaigns, incentive schemes, etc.

Behavioural change is the consequence of a) informing and educating people so that they develop an awareness of the issues; and b) attitude change towards entrenched behaviours, which can happen once education has been achieved. Behaviour itself will only change once attitudes are altered, and once the benefits of the new behaviour are fully understood. For South African road users to behave differently – i.e. more safely – on the roads, the first important step is ensuring that key road safety facts are understood. For example: the fact that seatbelt use is mandatory in the back seat of a vehicle is a fact that many South Africans are unaware of. As a first step towards changing behaviour we thus need to address both ignorance and attitudes. Social marketing is a significant player in this regard, as evidenced by the successes of road safety marketing campaigns around the world. The number of crashes and fatalities will reduce as soon as South Africans have a better understanding of risks and safety; and have a different attitude towards unsafe road user behaviour.

Timeframe: Thee first educational campaigns should be produced and released within 6 months. This is hugely important to achieve as soon as possible. In the early campaigns the most basic facts must be conveyed – these relate to high-impact crashes and include:

- The relationship between speed and crash risk (stopping distance etc.). Examples of excellent adverts to this end are found across the UK and Europe.
- The value of seatbelts.
- The importance of being visible on the roads (pedestrians, cyclists, motorbikes and vehicles).
- The importance of good tyres and brakes.

- Fatigue and alcohol – these relates specifically to high impact crashes.
- Driver cooperation with emergency vehicless

Responsible Organization: RTMC

Cost implication: **MEDIUM:**

Underfunding of road safety advertising in South Africa must be reviewed. The rollout of national television adverts will cost in the regions of R30-million to R75-million per year. However, television stations are also obliged to contribute airtime for social and health concerns. Therefore, negotiations should begin as matter of priority to ensure maximum coverage, at the right times, to the right audiences, as soon as possible.

Staffing. The RTMC Marketing staff should work with top marketing experts to achieve the best high-impact adverts.

Specific tasks:

a) RTMC Marketing staff to constitute a social marketing team.
b) Team to develop a marketing strategy; supported by a ring-fenced marketing budget. Priority should be for national television campaigns at key times of the year (roughly 6 month's advertising across all major channels).
c) Given budget limitations it is important to prioritise those behaviours that have the most impact on casualty levels and on traffic deaths in particular, and address those behaviours which have proven responsive to mass media campaigns elsewhere. There are good models to draw from. The table below indicates a prioritisation of problem areas and good practice examples to draw from.

BEHAVIOUR	GOOD PRATICE EXAMPLES
Seatbelt use: Improving seatbelt use will bring about an immediate reduction in deaths and serious injuries, even before total crash numbers begin to drop.	• FIA Foundation seatbelt toolkit. • Por Amor – Costa Rica Seatbelt campaign • UK Think seatbelt campaign
Speed: Speed is the number one cause of serious and fatal injury – any traffic related injury increases in severity in direct proportion to the speed at impact. However there is poor understanding of the role that speed plays in injuries	• Australia – No-one thinks big of You campaign • UK "Hit me at 40"
Alcohol and drugs: Alcohol is a factor in a significant number of crashes in SA. This problem affects not only drivers of vehicles but also other types of road users, including (significantly) pedestrians.	• WHO Drinking and Driving safety manual • USA Faces of Drunk Driving campaign [32] • Australia – TAC drink driving campaigns
Pedestrian safety: Pedestrian deaths typically exceed those of other types of road users including passengers and drivers. Factors such as poor visibility of pedestrians, dangerous crossing	• WHO Pedestrian safety manual. • SANRAL Pedestrian safety strategy • USA Streetsmart campaign[33]

[32] http://www.facesofdrunkdriving.com/
[33] Be Street Smart: http://bestreetsmart.net/

manoeuvres, and poor judgment of vehicle behaviour can be addressed through social marketing.	• Safe Kids Canada – Making it Happen
Cellphone use (Distracted driving): Research from abroad suggests that this form of distraction can be more dangerous than drunk driving. Cellphone use by pedestrians is also problematic	• Transport for NSW: Get your hand off it campaign

d) RTMC Marketing to define and distribute a road safety theme calendar for all provinces which can guide the rollout of specific campaigns. The one below has been slightly adapted from the Western Cape example, mostly to ensure prioritization is given to seatbelt education.

Month	Theme
January	Seatbelt safety & Back To School
February	Alcohol & Road Use
March	Seatbelt safety
April	Speed & Seatbelts
May	Distracted Driving
June	Visibility
July	Alcohol and road Use
August	Speed
September	Seatbelts
October	Child Road Safety
November	Pedestrian Safety
December	Speed & Alcohol and Road Use

While it is possible that the calendar could reflect national themes (such as Women's' month, Youth months etc.) this is discouraged as it can be difficult to reconcile road safety messages with themes without diluting their impact. It is recommended that the two calendars be kept separate. Rollout of adverts should precede rollout of enforcement campaigns.

4A(iii) Rollout a responsive campaign empowering public transport passengers and other road users to report poor and/or dangerous driving ('Speak out' campaign)

Motivation: Many of the major crashes in South Africa involve public transport vehicles (including mini-bus taxis). In many instances passengers are victims of such crashes, often the result of dangerous or poor driving. There is need for some mechanism for passengers of such vehicles to be able to report poor or dangerous driving before it results in a crash.

Timeframe: Immediate.

Responsible Organization: RTMC, SANTACO

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity. Should be initiated as part of awareness campaigns.

Specific tasks:

a. Implementation of a short research project which surveys the opinions of public transport users and helps identify the specific problems they encounter.
b. Development and establishment of a central telephone complaint system which passengers can use to call/log concerns as they arise.
c. In addition, a mechanism and processes needs to be developed that prioritise and identify suitable actions to address issues raised.
d. Response must be set in place, coor
e. dinated though responses/processes need to be developed so that the complaint service actions those concerns which are most dangerous, and addresses them.

4A(iv) Develop and rollout programme of community based engagements around road safety awareness projects

Motivation: All road users should understand their responsibilities under the safe systems principle and should be empowered, with education and information, to make safe choices. In addition, community residents should be empowered to assist in the design and implementation of road safety interventions.

Timeframe: Begin immediately but this is a long term commitment and iterations will be required.

Responsible Organization: RTMC

Cost implication: **LOW – MEDIUM**: Depends on the model chosen. A sustainable and essentially successful model will build on voluntary participation, rather than on paid representation by communities.

Staffing: RTMC to develop a Community Engagement team, comprising leaders from each of the nine provinces. Provincial and municipal staffing will also be required to coordinate the community groups in their respective areas.

Specific tasks:

a. For community forums:
    i. Establish best practice model for road safety within communities, bearing in mind that communities differ from each other so a 'one-size fits all' model may not work.
    ii. Appoint RTMC staff to take responsibility for the project rollout, and allocate an appropriate budget.
    iii. Establish community outreach programmes in support of road safety.
    iv. Be sure that the communities are empowered to be active through:
        - clear mandates
        - clear purpose, deliverables and expectations
        - appropriate resources at local and national level
        - availability of expert advice
        - Provision of road safety information to each community to ensure discussions are informed. To this end a package of road safety information must be produced and disseminated.

- All community based programmes should be sensitive to cultural and language barriers.

v. Work with effective community structures to learn lessons on improving and expanding the intervention.

b. In parallel with the generic community model, develop and enhance the road safety ambassador (champions) model
c. Engage with youth as a particular community. In addition to the guidance under (a) above, the following should be provided:
   i. Establish a YOURS network (Youth for Road Safety) in South Africa, using the international YOURS model and resources already available.
   ii. Work with high schools in local areas to develop YOURS youth associations.
   iii. Develop a mentorship programme at national level to lead on the education of the youth around youth-specific risks.
d. Local government should prioritise road safety in their integrated development plans and local heads of transport should routinely report on improvements or challenges in achieving road safety targets.

4A(v) Devise focused persuasive road safety behaviour change campaigns targeting all road users

Motivation: Specific groups of road users have specific recurring problems or risks. These may, in many cases, be addressed through the application of specific education campaigns, which target particular behaviours and help road users to change their habits.

Timeframe: Pedestrian campaigns should begin in the short-term. Other high risk campaigns phased in later.

Responsible Organization: RTMC

Cost implication: **LOW – MEDIUM:** This could be cost neutral as some groups may be charged and obliged to take the courses (e.g. offender groups).

Staffing: RTMC to lead with a dedicated core group. Education delivery can be outsourced or run in-house.

Specific tasks:

a. Pedestrians at high risk locations: Education programmes can be developed and rolled out for pedestrians on freeways; child pedestrians crossing roads and on route to school; night time pedestrians and so on. These can be delivered though employees, through community groups or with the assistance of youth.
b. Habitual speeders/ drunk drivers (rehabilitation of suspended drivers): Drivers who receive repeated fines for particular behaviour – for example speeding, or those who are disqualified from driving because of repeat offences, should be offered/obliged to take courses addressing their behaviour. Intensive 2-day courses have been shown to have an extremely positive impact on transgressors.
c. Professional drivers (freight and public transport): Drivers whose livelihoods come primarily from driving are amongst the most skilled, but may also be subject to particular driving risks, such as fatigue. Specific courses can be developed to address the unique challenges they face.
d. Youth: Youth are important and positive groups in the road safety environment. They are also, statistically, the most prone to crash involvement. Specific educational opportunities should be related to enhance their understanding of their risk and

increase their drive to keep themselves safe. YOURS (Youth for Road Safety) has excellent resources already available.)

4A(vi) Conduct research into new opportunities for youth, women and people with disabilities in road safety and create opportunities for them to pursue careers in road safety

Motivation: Young people are at particular risk of being injured or killed in a crash as a result of their mobility patterns, inexperience and risk taking behaviour. It is important that the specific risks of South African youth are explored, and that new opportunities to address such risks be identified.

Timeframe: Begin immediately though the selection and implementation of ideas may take longer to implement.

Responsible Organization: RTMC

Cost implication: **MEDIUM:** Funds may be required for expanded research capacity and adequate resourcing.

Staffing: Unclear as yet, to be determined.

Specific tasks:

a. A working group should be established or delegated to develop a range of options that could potentially change the behaviour of young people on South Africa's roads, as drivers, pedestrians, passengers, riders or cyclists. Included would be opportunities for women and people with disabilities.
b. Both deterrence and encouragement should be looked at.
c. The proposals should be assessed by the RTMC and implemented as appropriate.

Medium term interventions:

4A(vii) Involve citizens especially the youth in leading safer road user behaviour (Introduce Road Safety Badge System – at local organisation and community development level e.g. scout clubs, youth clubs, school badges etc.)

Motivation: Young people in South Africa and internationally are overrepresented in traffic crashes and fatal traffic crashes more particularly. This is a consequence of their high mobility levels, inexperience and their appetite for risk-taking that is well evidenced amongst researchers worldwide. The likelihood of young people being killed or seriously injured in a crash is higher than for other age groups. Young people across South Africa are keen to play a leading role in educating their peers about road safety risks and this opportunity is a significant one. It will allow a new approach to road safety education, one which is youth driven and youth informed. Young males are particular challenging as an audience for road safety messages; it is believed that messages that are developed and delivered by the youth themselves will have particular resonance.

Timeframe: Immediate

Responsible Organization: RTMC

Cost implication: **LOW – MEDIUM** Should integrate with the budgets for other similar programmes.

Staffing: Engagement with youth will require coordination and management though the RTMC and this will have staffing implications which are unclear at this stage.

Specific tasks:

a) Identify youth leaders who are willing to engage, and develop a coordinated approach to engaging with them.
b) Evaluate the introduction of a Road Safety Badge System – at local organisation and community development level e.g. scout clubs, youth clubs, school badges etc.
c) Deliver customised education for young people to ensure that engagements with other South African youth are informed.
d) Build on best practice from other countries to ensure that youth leadership in road safety is appropriately targeted and effective.

4A(viii) Explore and implement sports and popular-culture based road safety interventions.

Motivation: Sports and popular culture afford excellent opportunities for engaging with the public around social concerns. There is great potential for sporting and popular culture events and personalities to be used positively as a means of delivering road safety messages and encouraging improved road user behaviour. The potential for this needs to be established and opportunities created to maximise their impact.

Timeframe: Medium term

Responsible Organization: RTMC

Cost implication: **LOW:** This can be done within the parameters of existing marketing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. Research should be commissioned to examine the opportunities that exist, and best practice guidelines for engaging with sports and popular culture industries, should be established.
b. Engagement with sport stars across different sport types, teams and age groups should be commissioned to identify potential partners in delivering of road safety messages.
c. Interventions should be developed and rolled out as part of the collective road safety awareness campaigns identified in 4A(i).

Long term interventions:

4A(ix) Conduct research into incentives for compliant road user (specifically fleet owners and drivers) behaviour (Behavioural economics research)

Motivation: Behavioural change involves a combination of punitive and positive aspects – the more people are encouraged positively to change their own behaviour, the more sustainable the effect. While a lot of focus is traditionally given to providing deterrent (i.e. punitive) effects, there is also potential in finding ways of rewarding people who successfully change their behaviour. Examples could include reductions in insurance premiums, community recognition rewards and so on. Some effort needs to be spent to find novel and sustainable ways of making improved road safety more attractive to the South African public.

Timeframe: Begin immediately though the selection and implementation of ideas may take a longer to implement.

Responsible Organization: RTMC

Cost implication: Unclear as yet, to be determined.

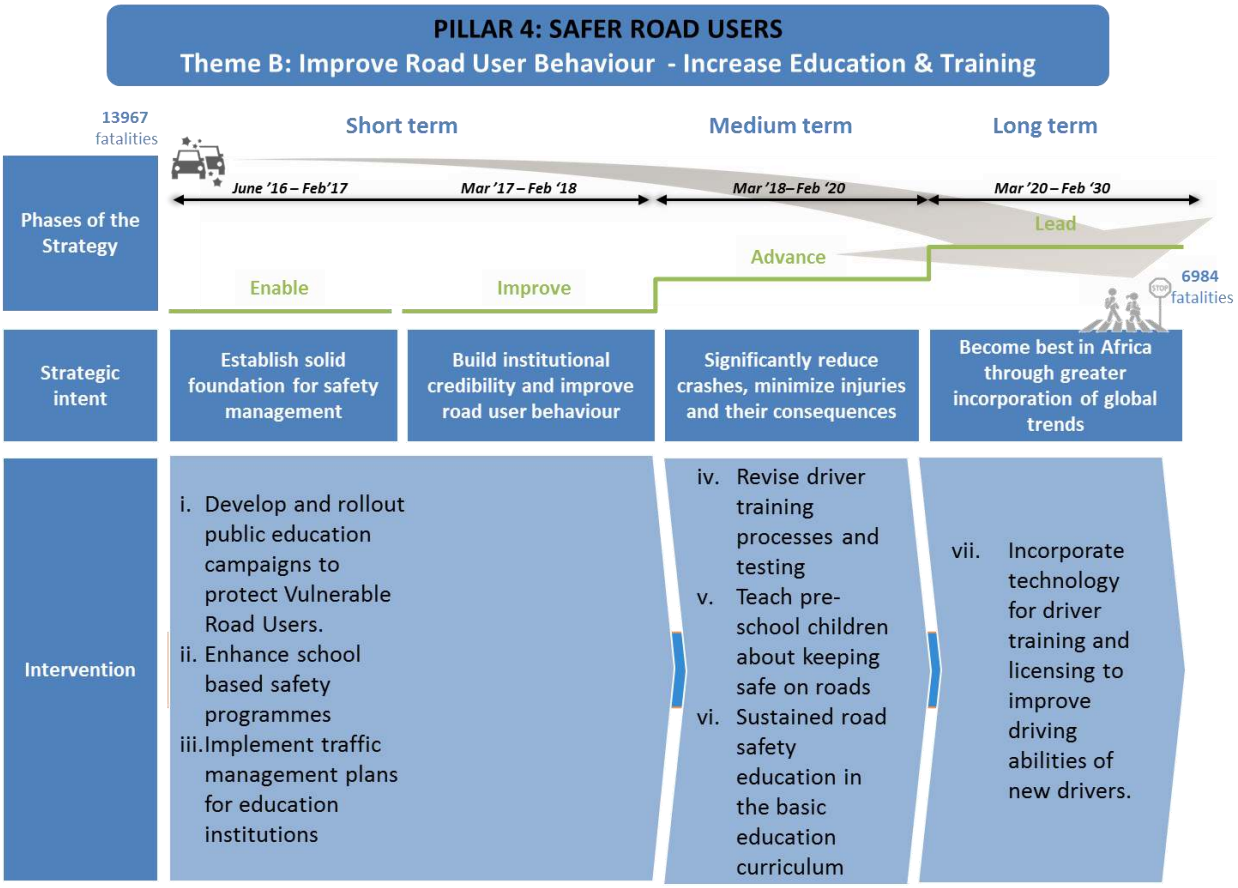
Staffing: Unclear as yet, to be determined.

Specific tasks:

a. Establish a working group to develop and evaluate a range of options that could potentially encourage the South African public to behave more safely as drivers, pedestrians, passengers, riders and cyclists.
b. The proposals should be assessed by the RTMC and implemented as appropriate.
c. Cross referencing with the group responsible for private-public engagement is encouraged, and the implementation and indeed genesis of such ideas would be mutually important.

4B Improve road user behaviour – Increased education and training

PILLAR 4 Safer Road Users	A. Improve road user behaviour - Increasing awareness/involvement
	B. Improve road user behaviour - Increase education & training
	C. Improve enforcement effectiveness
	D. Increased protection for VRU's



Short term interventions:

4B(i) Develop and rollout public education campaigns to protect Vulnerable Road Users.

Motivation: Pedestrians account for around 34.5% of traffic fatalities each year. The risks of other vulnerable road users such as cyclists and motorcyclists are also disproportionately high. Vulnerable road users are defined as those road users whose chance of survival in a crash is seriously compromised by either the lack of physical protection or their physiological limitations which makes them more vulnerable to crash forces. Lack of protection applies to pedestrians, cyclists, motorcyclists, motorised wheelchair users, bakkie and truck passengers. Being vulnerable as a result of physical limitations applies to children, elderly road users and disabled road users. Specific protective policies and education programmes for each of these categories of road users are needed urgently to ensure that those most vulnerable on South African roads are educated on road safety and made aware of specific road safety risks they are likely to be exposed to.

Timeframe: Immediate

Responsible Organization: RTMC and DoT

Cost implication: **MEDIUM:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity but may be supplemented by integrating with similar campaigns.

Specific tasks:

a. Research must be commissioned into the specific vulnerabilities of all VRUs to quantify the scale of the problem and establish the level and severity of risks.
b. Following thereon, specific policies and education programmes may be developed and implemented to educate VRUs of the risks and mitigating actions.
c. These should include evaluation and consideration of the 4 Es; i.e. education, enforcement, engineering and evaluation.

4B(ii) Enhance school based safety programmes including scholar patrol, pedestrian safety and cyclist education

Motivation: Safety in the vicinity of schools continues to be a concern in South Africa, given the risks associated with high child death rates. The scholar patrol system is one that has a long history in South Africa and is believed to have produced good results in the past (although no evaluation documents are available). It should be retained and expanded. The system has two advantages; it provides direct education around road safety to those involved in the scholar patrol team, and it enhances the safety of a larger number of children who are not.

The WHO recommends helmet use for cyclists as one key intervention towards reducing VRU deaths. Research is required in the SA context to understand the challenges that may accompany enforcing current legislation, and to develop an appropriate rollout of effective enforcement and education campaigns.

Timeframe: This is recommended for short-medium term implementation.

Responsible Organization: RTMC, DOE

Cost implication: **MEDIUM:** Additional funds may be required for expanded capacity.

Staffing: Additional staff and training of existing educators would be required.

Specific tasks (scholar patrols):

a. Audit the extent of scholar patrols in SA at present.
b. Document the successes and challenges associated with the programme in the past.
c. Develop an enhanced scholar patrol service in schools by learning from international best practice; but adopting a conservative approach (i.e. utilising children only in low risk scenarios).
d. Roll out enhanced scholar patrol services to all provinces and all schools that are identified as being appropriate.

Specific tasks (cyclists):

a. Investigate what potential problems there are in enforcing legislation for all cyclists and child cyclists only.
b. Engage with private sector to identify opportunities for helmet-based road safety interventions
c. Develop public messages encouraging helmet use and informing the public about legal requirements
d. Educate traffic officers about the law and enforcement practices.

4B(iii) Implement traffic management plans for education institutions

Motivation: The movement of children and students (mostly as pedestrians) is concentrated around schools, technikons and universities, also during specific time periods (opening and closing of facilities). There is a need to evaluate the arrangements/facilities for pedestrians, public transport and private transport in the vicinity of such institutions and to develop specific traffic management plans. Such plans also need to evaluate speed limits on adjacent streets and reduce them where required. It is known that the USA and Australia have very strict traffic rules around schools and school transport.

Timeframe: It is suggested that the most hazardous locations be identified first and that the action start there immediately.

Responsible Organization: Local authority in co-operation with the Department of Education or other body responsible for educational facility.

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a) Conduct research and evaluation of key risks and causes for crashes in vicinity of schools.
b) Perform investigation and identify remedial measures.
c) Implement measures.

Medium term interventions:

4B(iv) Revise driver training processes and testing (all license types, including K53 and Learners Licence tests)

- Investigate opportunity for school- and TVET-based graduated learner driver programmes to enable learners to acquire drivers' licensing together with their grade 12 or technical and vocational qualifications.

Motivation: The original K53 driving test that is currently still in use was established over two decades ago. Very little has been done to ensure these driving tests remains with best practice to produce well trained and competent drivers. In order to ensure road safety improves the driver's ability to control the motor vehicle, the level of driving education needs to be increased. To accomplish this, a revised driver education programme must be developed, one that builds on safety as a fundamental component of the driver training.

In addition to driving tests being outdated, driving schools that train students to drive are currently unregulated, that implies that there is no formal curriculum or minimum level of training that instructors need. Due to this lack of regulation many of these driving schools offer programmes that are often limited to only training students as per the minimum requirements needed to pass the driving test and not training students to drive and engage with the road network and other drivers safely.

The implementation of alternative training process should consider incorporate graduated (accompanied) driving. The system will require the regulation of driving instructors across the country, and a driving school inspectorate should be developed and resourced to manage and audit regulated driving schools.

An essential life skill for any young person is to have a drivers licence as this is often a prequalification requirement for long term employment. This intervention should also investigate the opportunities to incorporate learner driver programmes to enable learners to acquire drivers' licenses together with their grade 12 or technical and vocational qualifications.

Timeframe: Consultants to be appointed immediately. Aim would be to achieve rollout of new programme in 2020.

Responsible Organization: RTMC

Cost implication: **MEDIUM – HIGH:** Additional funds may be required.

Staffing: RTMC will need to have a responsible unit in-house to manage the regulation of the trainers.

Specific tasks:

a) Undertake a study of current systems and best practice internationally for both driving tests (all different types of licences) and accompanying regulations for driving schools.
b) Evaluate test and implement replacement driver testing process for all driver types including learner licences, all forms of vehicle licence types as well as professional driver requirements
c) Regulate driving schools to ensure uniform standards are applicable to all driving schools. This is to include amongst others: minimum requirements for driving instruction in terms of their training qualification and formalisation of curriculum and processes followed in training student drivers
d) Investigate the introduction of school- and TVET-based graduated learner driver programmes to enable learners to acquire drivers' licensing together with their grade 12 or technical and vocational qualifications..

4B(v) Teach children from pre-school level about keeping safe on roads

Motivation: Road deaths are the leading cause of premature mortality for children in South Africa (Medical Research Council). Keeping them safe as road users must be an immediate priority. While much road user behaviour is learnt even before the child starts school, the first

opportunity to systematically educate children about safe road use is in the preschool context and upward. Age appropriate interventions should be developed and implemented for every age group; including preschool children, reflecting the childrens' primary modes of transport and the risks small children most commonly face as a consequence of age; geography and development stage.

Timeframe: Immediate

Responsible Organization: RTMC and DOE

Cost implication: **MEDIUM:** Additional funds may be required.

Staffing: Additional support staff along with training of educators

Specific tasks:

a. A dedicated training package for pre-school children to be developed and piloted as a matter of urgency.
b. Once pilot is completed the training package should be rolled out systematically to all preschools in South Africa.
c. It should be supported with national television campaigns which resonate with the lesson plans and content.

4B(vi) Introduce sustained road safety education in the basic education curriculum

Motivation: In order to develop a culture of safe road usage from a formative age, the emphasis will be on instilling road safety knowledge, skills and behaviour through integrating road safety education in the school's curriculum from Grade 0-12 working together with the Department of Basic Education.

Timeframe: Begin immediately with full rollout achieved by January 2019

Responsible Organization: RTMC and SANRAL

Cost implication: **MEDIUM:** Funds may be required for adequate resourcing capacity.

Staffing: RTMC currently employs experts in road safety education. There is thus a team already in place for the rollout of the national plan.

Specific tasks:

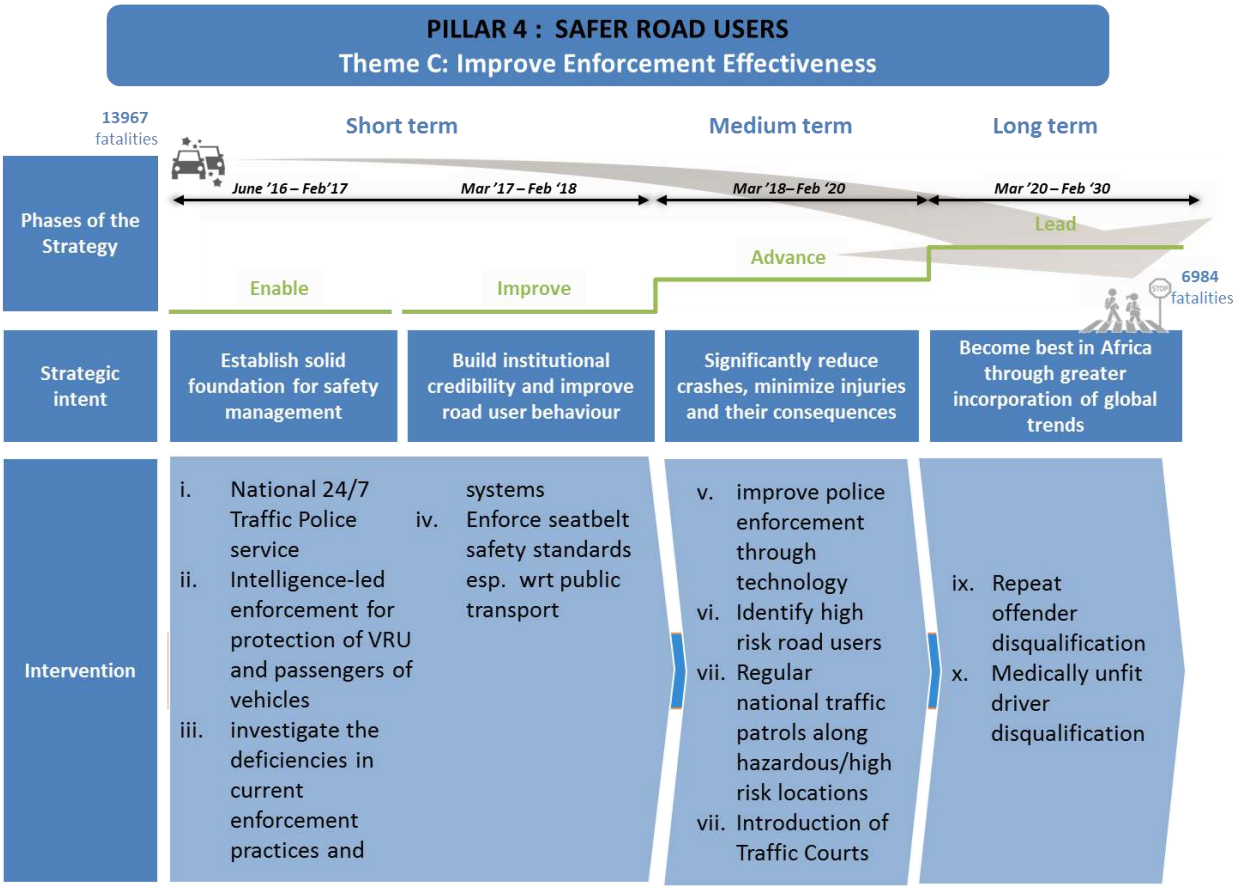
a) SANRAL has been developing proposals for national education programme for primary and high school learners. SANRAL should be supported to take this concept to completion, and their proposal then needs to be supported by the DoE, and implemented as soon as possible.
b) The idea would be to build road safety into the school curriculum for each child, in every year of school (from Grade R to Grade 12).
c) The complexity of the topic should reflect the learners abilities; though relate to the context in which the learner lives, and should build gradually each year to achieve a full understanding of road safety issues.
d) Practical training into safe road use – for pedestrians, cyclists and young drivers – should be included. In Grade 11 and 12 the curriculum can be driven by the contents of the drivers licence programme, with the aim of offering the learners licence test as part of the curriculum.

Long term interventions:

4B(vii) Incorporate technology for driver training and licencing to improve driving abilities of new drivers.
Motivation: As part of the improved driving training that is required, South African learner drivers need to be trained in hazard perception techniques, and in driving under imperfect driving conditions (e.g. wet roads, night-time conditions etc.). Traditionally these are areas that have been left off the conventional training and testing in South Africa, but are areas which are now included in many learner driving programmes internationally. Best practice suggests that exposing learner drivers to hazards and poor driving conditions in a safe environment, through the use of computer simulation, allows them to experience and learn from hazards in safety. Simulation technology has a significant role to play in producing drivers that are suitably equipped to manage challenging situations in real life. Timeframe: This can be implemented as an extension of improved driver training. . Responsible Organization: RTMC. Cost implication: Unclear at this stage Staffing: Unclear at this stage Specific tasks: a) Identification of international best practices in area of use of technology in training and testing learner drivers b) Development of a national rollout plan for the addition of computer simulation as part of the learner driver curriculum

4C: Improve enforcement effectiveness

PILLAR 4 Safer Road Users	A. Improve road user behaviour - Increasing awareness/involvement
	B. Improve road user behaviour - Increase education & training
	C. Improve enforcement effectiveness
	D. Increased protection for VRU's



Short term interventions:

4C(i): Ensure that traffic departments provide a 24/7service nationally

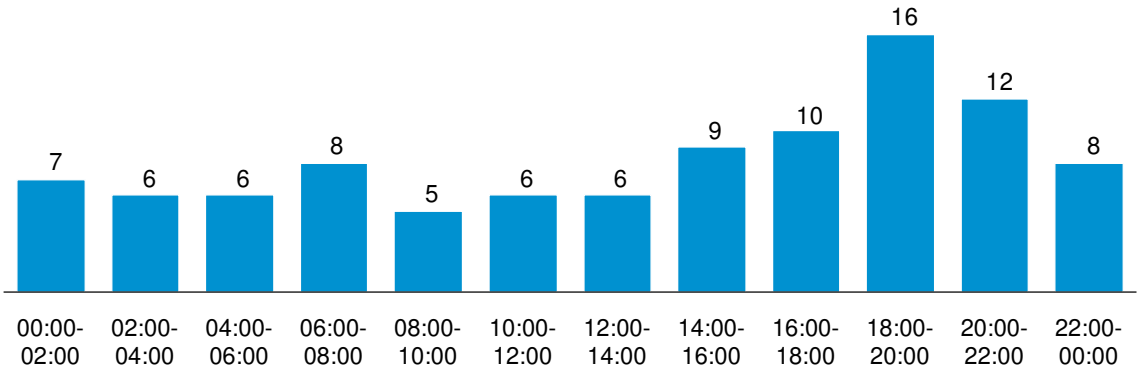
Motivation: According to the RTMC traffic report for 2011, 51.73% of fatal road crashes occurred during the hours of darkness. The histogram incorporated in the DoT Country Report (below) indicates that some 55% of fatal crashes in South Africa occurred between 18:00 and 05:59. Approximately 20% to 25% of the daily traffic volumes occur during those hours on most roads. The majority of crashes therefore occur when roads are less busy but darker.

These figures were also confirmed in an analysis of the Western Cape fatality database. Where 53.9% of the 8 973 fatal crashes (for which there is valid time data) between 2006 and 2013 took place during hours of darkness.

Collisions with pedestrians are highest between 19:00 and 21:00, and they are also the most frequent road crash type for the time span from 16:00 to midnight.

Distribution of fatal crashes per time of day

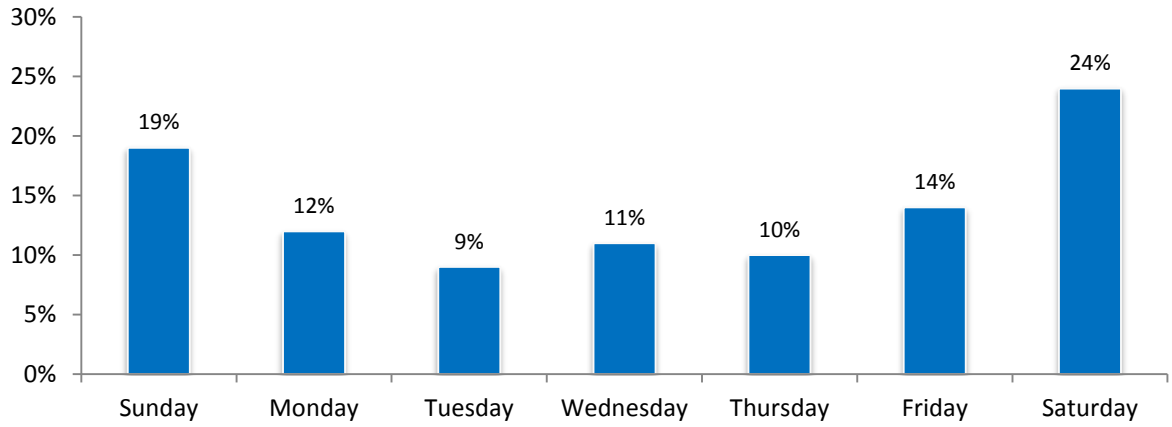
NDoT mid-term Country Report 2015



- Just over 50% of fatal crashes during hours of darkness, whilst only 20 to 25% of traffic volumes
- Pedestrians highest between 19:00 and 21:00
- Speed plays role – speed at impact most important determinant of injury severity

Statistical evidence from the Road Traffic Management Corporation road safety reports have shown that most road crashes resulting in road traffic injuries occur during weekends, as shown in the figure below.

Distribution of fatal crashes per day of the week
(RTMC)



Evidence indicates that many crashes also occur over weekends and after normal working hours.

Timeframe: Commence immediately

Responsible Organisation/s: Provincial and local government traffic authorities

Cost implication: **MEDIUM:** Budgetary implication in the form of longer working hours, changes in the number of shifts and employees. May also require additional equipment and an increase in operational costs associated with these i.e. increase in frequency of use therefore more maintenance, shorter useful lives, etc.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with an increase in number of traffic officials.

Specific tasks:

a. Develop operating model to ensure that enforcement resources are adequately deployed throughout the day including hours of darkness
b. Identify after hours and weekend high risk locations and crash causal factors e.g. speed, alcohol, etc. to ensure effective enforcement in these location
c. Devise an appropriate intervention strategy that will maximise the use of limited resources.
d. Compile detailed resource plan and budget.
e. Engagement with employees and implementation of new work programme. Link to standardisation interventions.

4C(ii) Develop, implement and enforce intelligence-led adherence to road laws, with focus on protection of VRUs and passengers, through the use of seatbelts and child restraints

Motivation: Modifying society's behavior can only be addressed through better education of road users on laws and road safety principles, fostering good behavior by social awareness campaigns and finally deterring road users from breaking the law through enforcement and prosecution.

In order to ensure effective and efficient allocation of resources requires that enforcement efforts are directed in a strategic and focused manner in terms of both locations as well as type of transgressions targeted for enforcement. This focus of intelligence led enforcement determined by evaluating and analysis completed on various data sources including, but not limited to, crash/enforcement/crime collected. Intelligence led enforcement more consistent across the country; and more obvious (i.e. the threat of being prosecuted must be perceived to be high).

For maximum road safety impact, traffic enforcement should be directed to address those infringements which are most dangerous. These include:

a. Speed (at high risk areas)
b. Dangerous overtaking
c. Cellular phone use
d. Seatbelt use
e. Alcohol and drugs
f. Unroadworthy vehicles.

The use of new technologies should be considered in the long term to further expanding the range and efficiency of enforcement and prosecutions**.**

Timeframe**:** Immediately. This is a high priority action.

Responsible Organization**:** RTMC, with support from Provincial and local authorities

Cost Implication: **MEDIUM:** With scale of enforcement required additional staff likely required. In addition the use of technology in the long term likely to require significant funding.

Staffing – Considered in conjunction with 4C(i) Re: 24/7 enforcement implying additional enforcement staff may be required.

Specific Tasks:

a. Immediate assessment of enforcement capabilities and practices for each Traffic Department.
b. Complete review of available data (intelligence) to support the identification of key enforcement area's and mechanism. This type of analysis is to be completed continuously in order to assess the success of focused enforcement
c. Development of national enforcement strategies to be carried out by all Traffic Departments.
d. Principles of all enforcement undertaken should include:
    - In all cases, enforcement must be accompanied by publicity and education.
    - Enforcement shall take place regularly, over long periods.
    - It should be unpredictable.
    - It should be highly visible.
    - It should be difficult to avoid.
    - Enforcement should be followed promptly by issuance of fines or a summons, and effective follow–up for prosecution. Where possible, enforcement should result in the direct issue of a summons (e.g. for speeding, dangerous overtaking, seatbelt use, drunken driving, cell phone use, etc.) as behavior change theory identified a link between immediate punishment and behavior change. Transgressing the law must have not only unpleasant consequences, but they should also be immediate.
    - In all cases enforcement should be intelligence-led as far as possible; responding to specific road safety problem in local areas. However random enforcement is also important to ensure that the public are regularly reminded about the importance of legislation.
    - Speed enforcement shall in ALL cases, be carried out only when the speed limit has been confirmed by the roads authority to be appropriate for circumstances.
    - Speed enforcement can be carried out with a combination of fixed speed cameras and mobile camera technology. Mobile units are an important way of increasing the visibility of enforcement patrols on the road network.
    - Automated speed over distance cameras are encouraged, as are automated red light enforcement cameras.
    - The national policy of traffic enforcement should also include the continued use of road blocks and random checking of vehicles.
    - A national policy towards cell phone offences should be developed, with a consistent approach including publicity and punishment.
    - Introduction of a national contravention register to ensure that repeat offenders are punished.
    - At the same time develops and promotes rehabilitation programs for habituated speeders and drunk drivers (as a prerequisite for redeeming driving licenses) are introduced.
    - Motorists who deliberately break traffic laws and endanger motorists shall face harsh consequences. High risk offences must receive custodial sentences.

- RTIA should provide manpower to ensure that offenders are unable to avoid prosecution.
- Repeat offenders should be banned from driving.
- Many of these actions can be best achieved through the implementation of traffic courts, dedicated to offences by motorists or other road users. The advantage of such a system (which has been utilised effectively in countries such as the UK, is that the courts staff. including prosecutors and judges, can be trained to understand road safety and the possible consequences of violations. Justice can be faster and more consistent.

4C(iii) Urgently investigate the deficiencies in current enforcement practices and systems, and rectify

Motivation: Challenges regarding enforcement has been raised by various stakeholders. This concern was borne out by the extent to which issues relating to enforcement within the road safety and traffic management have been highlighted in various research studies and media publications. This area of focus has therefore been identified as a foundational issue which needs to be focused on and addressed, if the strategy is to be successfully implemented.

A complete investigation and analysis of the current as-is situation is to be initiated as soon possible. This assessment aims to inform and focus implementation of robust business improvement and re-engineering interventions which will address the shortcomings and enhance current systems and procedures to improve efficiency and effectiveness of enforcement.

Uniform and concise performance management systems are effective mechanism to ensure enforcement divisions are suitability incentivized to address road safety concerns and road law enforcement and should be adopted and aligned to key performance indicators identified.

Timeframe: This should start immediately

Responsible Organization: RTMC and all roads authorities.

Cost implication: **MEDIUM:** Funds may be required for additional capacity and adequate resourcing.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. Initiate full investigation of all current business processes and systems and identify inefficiencies and gaps.
b. Develop a business re-engineering process to address the above
c. Investigate all complaints of fraud and corruption and process to the full extent of the law
d. Introduce stringent performance management systems at all levels
e. Clarify and re-affirm the interface between enforcement and justice, as a continuum of legal compliance

4C(iv) Enforce stricter adherence to seatbelts safety standards on all road-based public transport vehicles and the use thereof

Motivation: Passengers on public transport vehicles are no less likely to become engaged in a crash situation than passengers in other cars, yet there is no legal requirement for them to be protected through the use of seatbelts. In numerous instances each year public transport crashes result in multiple deaths, many of which would have been avoided had passengers being using seatbelts at the time of crash.

Legislation for seatbelts on public transport vehicles would make it mandatory for seatbelts to be fitted, and worn, on public transport vehicles, significantly reducing the risks of death or serious injury in the event of a crash.

Both public transport operators and enforcement officers should be proactive in promoting the use of seatbelts by passengers.

Timeframe: This process can start immediately

Responsible Organization: DoT, RTMC, RTIA.

Cost implication: **LOW:** This can be done within existing budgets, so no additional cost ins envisaged to the public sector. Costs for the fitment of seatbelts need to be borne by public transport operators.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks: The Road Traffic Act needs to be investigated with the goal of including a requirement for the retrofitting and use of seatbelts on public transport vehicles, and the mandatory fitting and use of seatbelts on all new public transport vehicles.

Medium term interventions:

4C(v) To improve police enforcement intelligence through appropriate use of latest technology (e.g. integrated enforcement system, speed-over distance technology)

Motivation: As part of the business improvement and process investigation for enforcement the opportunity for using technology and information systems to overcome identified challenges must be investigated, tested and appropriately rolled-out for maximum benefit.

Technology provides the opportunity to take a quantum leap forward in improving the manner in which law enforcement within the road safety sector takes place and to create an enabling environment for improved managerial systems, controls and decision making. Integrated and multi-functional service solutions can bring about greater efficiencies and effectiveness within the sector through automation of certain aspects of road safety as well as support the collection of qualitative and quantitative information that in turn improve managerial decision making.

Examples of the use of technology are the speed over distance enforcement, vehicle tracking systems and dash-board cameras.

Timeframe: Identifying current technologies should start immediately (specific and public platforms) that can be utilized to gather quality detailed information.

Responsible Organization: RTMC and all roads authorities.

Cost implication: **MEDIUM:** Funds may be required for expanded research capacity and technologies.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a. Explore the optimization of existing technology applications, where and how it can be expanded and applied. This does not only have to be within the transport or road management sectors but also in other related spaces such as municipal billing and income collection systems.
b. Confirm key areas and related gaps with regards key data, information and knowledge collection and collation.
c. Identify critical challenge areas and seek technology solutions to address areas identified.
d. Test, optimize, procure and implement appropriate technological interventions
e. Consider the whole enforcement system and identify integrated solutions in preference to specific solutions.

4C(vi) Identify and address of high risk road users for focused interventions

Long term: 4C(ix) Implement repeat offender disqualification together with rehabilitation programmes for licence reinstatement (refers to drivers exhibiting reckless behaviour e.g. intoxication, negligence, etc.

Motivation: Based on international best practice it is assumed that individual road users who are prone to take risks, do so repeatedly. Best practice examples utilise direct engagement with these repeat offenders to dissuade continued poor behaviour. This direct engagement includes activities such as phone calls and direct mail. This intervention is based on the pareto principle (20/80 rule) that says that focussing on the critical few will have a significant impact on the efforts aimed at reducing the fatality target numbers.

Responsible Organization: RTMC and all enforcement authorities.

Cost implication: **MEDIUM:** Funds may be required for expanded research capacity and adequate resourcing.

Staffing: It could require some expansion of existing capabilities and integration with the data management teams.

Specific tasks:

a. RTMC has to request all roads authorities to identify the high risk road users in their jurisdictions.
b. Develop a “three-strike” system aiming at taking the repeat offender through a process of:-
    i. Firstly Awareness and Education - though direct communication with identified offenders alerting them to the consequences of their actions and the probability of causing fatalities
    ii. Second, penalties in the form high fines, limited licence revocation and / or legal persecution.
    iii. Finally, permanent licence withdrawal and persecution to the full extent of the law.
c. Should drivers want to earn back their right to be on the road, they have to participate voluntarily in a full rehabilitative process aimed at improving their driving behaviour and attitude with regards to road safety.

4C(vii) Start regular national traffic patrols along hazardous/high risk locations

Motivation: International experience is clear that high visibility of police patrols improves driver behaviour as drivers are less likely to take risks for fear of prosecution. Fewer dangerous manoeuvres along high risk locations will results in fewer crashes. In addition, for those crashes that do occur the presence of traffic police in the vicinity will assist in post-crash response, investigation and care.

Timeframe: This should start immediately, but could take a year to implement

Responsible Organization: RTMC and all roads authorities.

Cost implication: **MEDIUM:** It could require some expansion of present traffic police.

Staffing: Could require additional traffic police at some jurisdictions as well as training

Specific tasks:

a. RTMC has to request all roads authorities to identify the major hazardous locations in their jurisdictions.
b. Then to start with a process of regular/continuous patrols in these areas. This should further include the management of rescue vehicles/ambulances to be on standby or easily available.

4C(viii) Improve enforcement and consider the introduction of Traffic Courts

Motivation: Modifying society's behaviour can only be addressed through better education of road users on laws and road safety principles, fostering good behaviour by social awareness campaigns and finally deterring road users from breaking the law through enforcement and prosecution.

A key element of effective enforcement is the need to prosecute transgressors in terms of the law. Current situation in South Africa has seen disregard for traffic fines and enforcement efforts due to the belief that prosecution mechanisms are inefficient to prosecute transgressors. In addition perception remains that traffic fines are also currently mainly used as a funding mechanism and that procedural requirement for prosecution makes it financially unfeasible. These factors perpetuate the disregard for the road laws and broad failure by road users to pay their traffic fines. This trend likely to continue if no steps are taken to address these issues.

Introduction of traffic courts that specifically focus of traffic enforcement prosecutions would significantly expedite addressing the backlog of outstanding prosecutions and over time change public perception that transgressions are not prosecuted. The advantage of such a system (which has been utilised effectively in many countries, is that the courts staff, including prosecutors and judges, can be trained to understand road safety and the possible consequences of violations. Justice can therefore be faster and more consistent.

In order to change user behaviour and improve enforcement, enforcement agencies need to change their stance of traffic fines that are currently utilised as a funding mechanism. Prosecution of traffic infringements should be prosecution irrespective of financial considerations. Although this might incur costs in the short term, long term behavioural change by road users paying fines without need to prosecutions likely to offset this.

Timeframe**:** Immediately. This is a high priority action.

Responsible Organization**:** RTMC, with support from Provincial and local authorities

Cost Implication: **HIGH:** Addition funding for this intervention should be set aside.

Staffing – Increase in staffing levels would be required to capacitate these traffic courts and expand enforcement.

Specific Tasks:

a. Traffic courts:
   i. Investigate feasibility and legislative requirements for the introduction of traffic courts
   ii. Establish traffic courts and train staff on road safety requirements
b. Fine enforcement:
   i. Enforcement agencies to re-evaluate funding mechanism to remove traffic fines returns as a source of income.
   ii. Initiate prosecution procedures for unpaid fines. Even though prosecution should not consider feasibility to make financial profit, consideration should be given to prioritise prosecution based on severity of transgression. Where possible enforcement should result in the direct issue of a summons e.g. for speeding, dangerous overtaking, seatbelt use, drunken driving, cell phone use, etc.)
   iii. Investigate and address (as far possible) current legislation requirements that cause prosecution to be costly and unfeasibly.

Long term interventions:

4C(x) Implement medical disqualification – and rehabilitation – (Physically unfit drivers)

Motivation: Motorised vehicles, due to their function to travel at speed, poses significant risk to both occupants of the vehicle and other road users. Data illustrated in the NRSS 2016-2030 shows that main cause of crashes are human factors unrelated to the vehicle and environment itself. By identifying, evaluating and suspending drivers licences based on drivers medical conditions potential dangerous drivers can be removed from the road network.

Some of these conditions are already recognised in legislation and policy (for example, brain injuries) but no comprehensive study has been done to determine what medical conditions constitute an unacceptable high driving risk.

Timeframe: Investigation into medical conditions can be started in 2017; completed at end 2017. Legislative changes can then begin.

Responsible Organization: RTMC, Department of Health. Dept. of Justice

Cost implication: Unclear at this stage, to be determined.

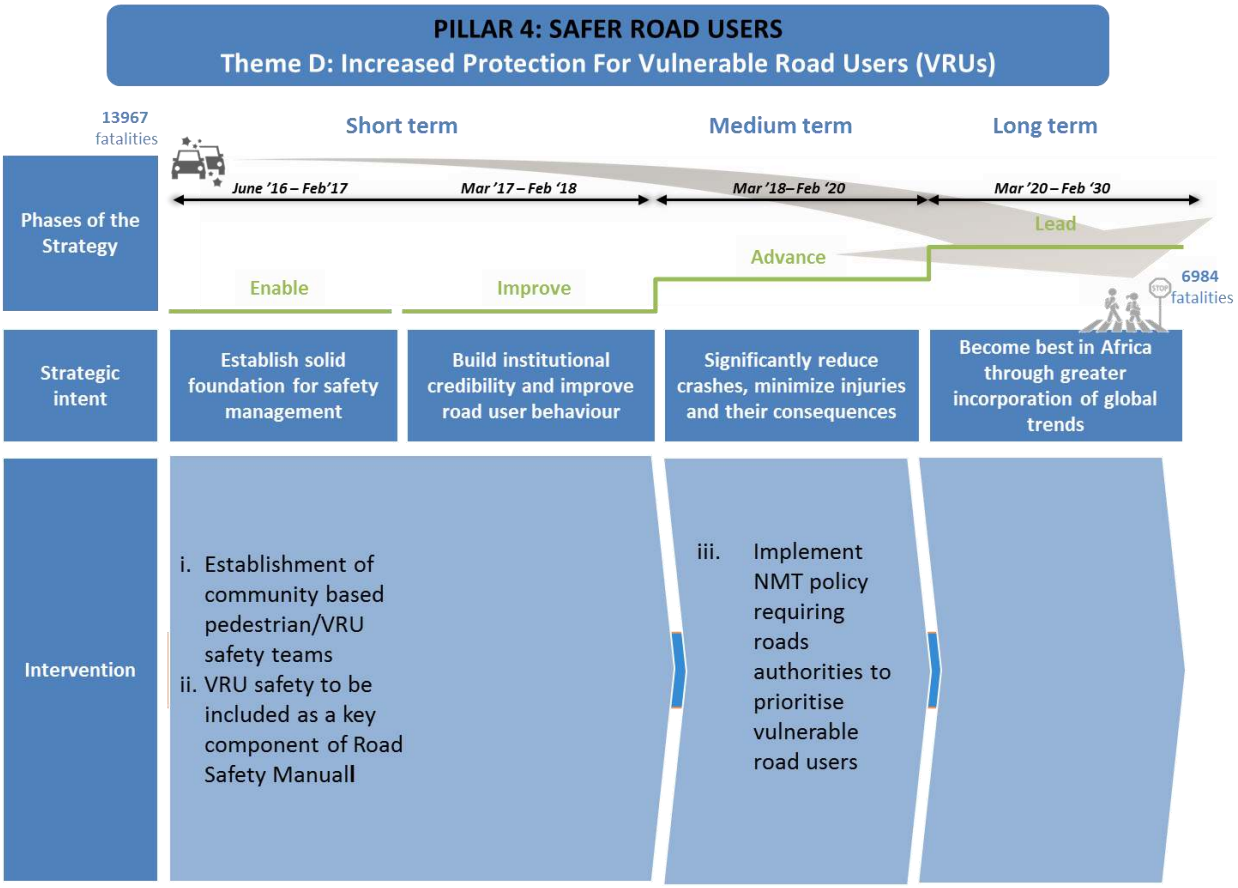
Staffing: Unclear at this stage, to be determined.

Specific tasks:

a) In association with the Department of Health, identification of comprehensive medical disorders that require to be evaluated for drivers licence suspension.
b) In addition special consideration to be given for drivers of advance age (over 75 years) and those who have suffered injury to be subject to regular medical examination, driver assessment and advanced eye test. Depending on assessment these to be repeated every 24 months.
c) Remedial training programmes developed for recovering drivers and banned drivers.
d) Issues of medical confidentiality need to be clarified.

4D: Increased protection for VRU's

PILLAR 4 Safer Road Users	A. Improve road user behaviour - Increasing awareness/involvement
	B. Improve road user behaviour - Increase education & training
	C. Improve enforcement effectiveness
	D. Increased protection for VRU's



Short term interventions:

4D(i) Establishment of community based pedestrian/VRU safety teams

Motivation: Road safety is everyone's responsibility and therefore requires communities to be actively involved in addressing road safety concerns. All road users should understand their responsibilities under the safe systems principle and should be empowered, with education and information, to make safe choices.

Communities based safety teams aim to empower communities and residents to assist in the design and implementation of road safety interventions to protect and educate road users within the community.

Timeframe: Begin immediately but this is a long term commitment and iterations will be required.

Responsible Organization: RTMC

Cost implication: **LOW – MEDIUM**: Dependent on the model chosen. A sustainable model aims to build on voluntary participation, rather than on paid representation by communities

Staffing: RTMC will need to develop a Community Engagement team, comprising leaders from each of the nine provinces. Provincial and municipal staffing will also be required to coordinate the community groups in their respective areas.

Specific tasks:

a. For community forums:
   i. Establish best practice model for road safety within communities, bearing in mind that communities differ from each other so a 'one-size fits all' model may not work.
   ii. Appoint RTMC staff to take responsibility for the project rollout, and allocate an appropriate budget.
   iii. Establish community outreach programmes in support of road safety.
   iv. Be sure that the communities are empowered to be active through :
      - Clear mandates
      - Clear purpose, deliverables and expectations
      - Appropriate resources at local and national level
      - Availability of expert advice
      - Provision of road safety information to each community to ensure discussions are informed. To this end a package of road safety information must be produced and disseminated.
      - All community based programmes should be sensitive to cultural and language barriers.
   v. Work with effective community structures to learn lessons on improving and expanding the intervention.
b. In parallel with the generic community model, develop and enhance the road safety ambassador (champions) model
c. Engage with youth as a particular community. In addition to the guidance under (a) above, the following should be provided:
   i. Establish a YOURS network (Youth for Road Safety) in South Africa, using the international YOURS model and resources already available.
   ii. Work with high schools in local areas to develop YOURS youth associations.
   iii. Develop a mentorship programme at national level to lead on the education of the youth around youth-specific risks.
d. Local government should prioritize road safety in their integrated development plans and local heads of transport should routinely report on improvements or challenges in achieving road safety targets.

4D(ii) VRU safety to be included as a key component of Road Safety Manual

Motivation: The new Road Safety Manual (RSM), produced by the World Road Association is designed to help countries at every stage of infrastructure development to fulfil road safety objectives. It is a manual for practitioners and decision makers on implementing safe system infrastructure. It is aligned with key pillars for the United Nations Decade of Action for Road Safety 2011-2020 and includes sections relating to: Pillar 1 Road Safety Management; Pillar 2 Safer Roads and Mobility and Pillar 4 Safer Road Users. Similarly South Africa also has a draft Road Safety Audit Manual aimed to support fulfilment of safety objective.

In the South African context VRUs (pedestrians, cyclists, passengers in open vehicles) make up a large portion of all road crash fatalities and therefore require being a specific focus for both infrastructure developments.

The South African Road Safety Audit Manual currently does reference vulnerable road users. Due to the severity of the dangers to VRUs it is imperative that this matter be expanded upon in any future production of this manual.

Timeframe: Medium term

Responsible Organization: SANRAL

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. Engage with the World Road Association to ensure that the global reference adequately deals with the issue of vulnerable road users within the guidelines for infrastructure development
b. Ensure that any future audits or publications of a South African version of the Road Safety Manual adequately address the challenges and issues relating to vulnerable road users.

Medium term interventions:

4D(iii) Implement NMT policy requiring roads authorities to prioritise vulnerable road users

Motivation: Urban environments managements, in particular local authorities, are increasingly investigating alternative means of transport and making infrastructure provision for non-motorised transport, particularly bicycles. How the NMT is provided within the greater road transport network and the interface between non-motorised vehicles and motorised vehicles is a critical consideration, considering that VRUs are often times the users of the NMT but is also present in the NMT as pedestrians, informal traders etc.

Timeframe: Medium

Responsible Organization: RTMC and SANRAL

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

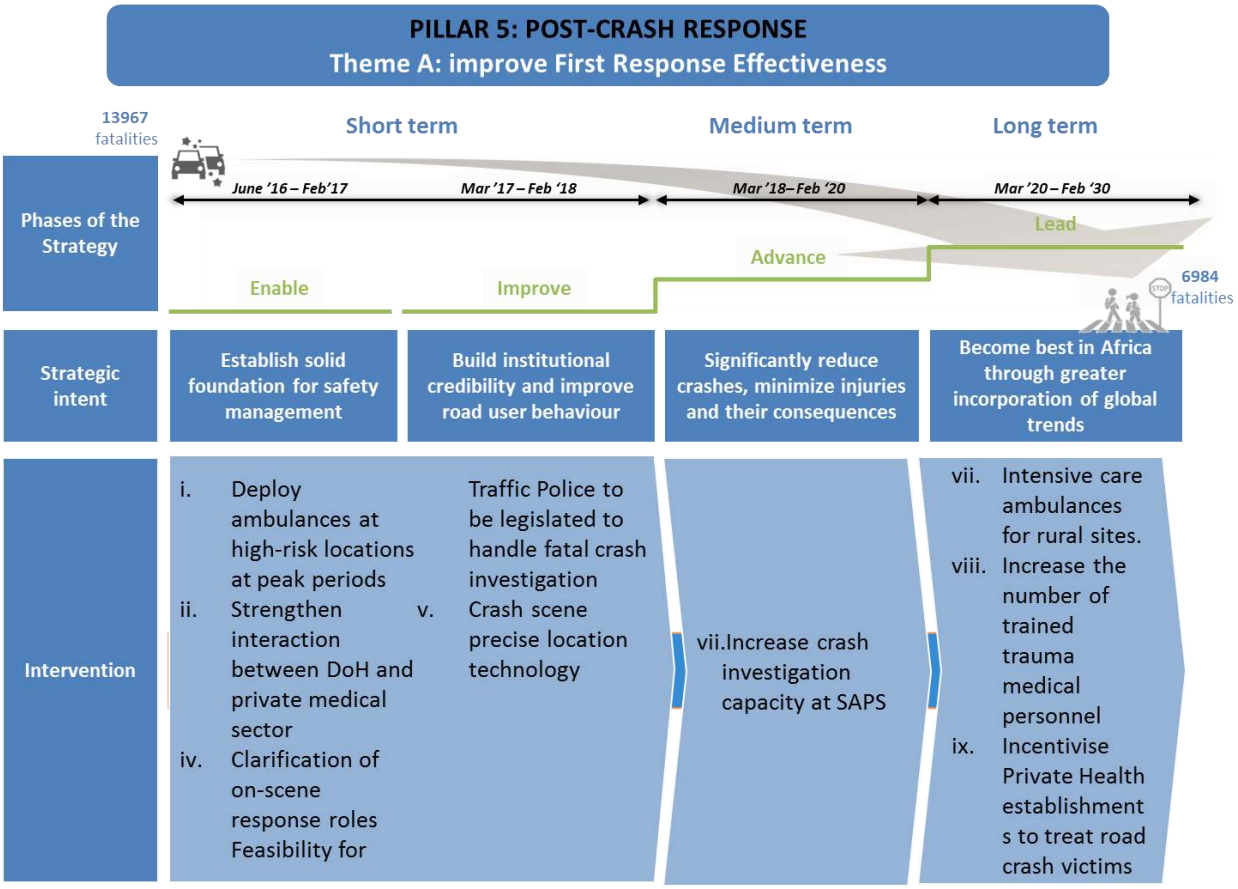
Specific tasks:

a. Commission or assign the responsibility of drafting a NMT National Policy, which guides the development of NMT networks, with a specific focus on VRUs within this space.

d. Post-Crash Response

5A: Improve first response effectiveness

PILLAR 5 Post-Crash Response	A. Improve first response effectiveness
	B. Simplify access to post-crash care



Short term interventions:

5A(i) Deployment of ambulances at high risk locations during peak periods
Motivation: Through the identification of high risk locations along local, provincial and national road networks, targeted interventions and deployment of emergency vehicles can be implemented so as to reduce the response time to reach crash scene and provide immediate post-crash care. The turn-around time for reaching crash victims, providing on-site care and transporting crash victims to emergency health care facilities will be significantly reduced if emergency vehicles, such as ambulances are strategically deployed. A shorter response time will have a positive impact on reducing the fatality rate relating to road crashes. This is intervention must be co-ordinated at national, provincial and local levels of road safety management, with DOH playing a lead agency role, supported by all the relevant agencies and departments of the respective spheres of government. This intervention must be an iterative intervention and cannot be a once-off effort. Implementation must be constantly reviewed and adjusted to respond to changing patterns or trends relating to high risk areas and peak times. Once these high risk sites have been identified, it can also be sites for other targeted interventions which contribute to reducing the incidence of crashes and road safety incidents Timeframe: This is possible immediately, where information and resources (staff and emergency vehicles) are available.

Responsible Organization: Department of Health, supported by emergency services agencies and private sector partners.

Cost implication: **MEDIUM:** Current budget provisions but additional resources will be required

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a. Develop a common definition of high risk areas at national, provincial and local levels, based on the number of crashes and road safety incidences occurring in a specific area or at a specific site. (SANRAL and DoT)
b. Road crashes and incidences to include both pedestrian and vehicular occurrences.
c. Identify and map the high risk areas per province as a first phase. Follow- up phases to focus on secondary and rural road networks
d. (SANRAL, DoT, PROVINCIAL TRAFFIC & LOCAL GOVERNMENT)
e. Define peak times based on time trends when crashes occur at the identified sites.
f. (SANRAL, DoT, PROVINCIAL TRAFFIC & LOCAL GOVERNMENT)
g. Identify and establish physical locations which are safe and in close proximity or at the identified site, where emergency vehicles and staff can be deployed.
h. (SANRAL, DoT, PROVINCIAL TRAFFIC, LOCAL GOVERNMENT & DOH)
i. Deploy emergency vehicles (ambulances) to identified sites (DOH)
j. Establish a data management system which records key data sets to ensure performance and impact can be measured. Data to include actual crash data and post-crash information relating to quality of care. (DOH)

Performance indicators:

- A reduction in response times by ambulances to crashes and road incident call outs
- A reduction in the number of fatalities at these particular sites over time

5A(ii) Strengthen interaction with DoH and private medical sector in post-crash response (Also HPCSA, medical schools, MRC, etc.)

Motivation: Post crash care services are offered by various different stakeholders including both public and private sector. Due to the importance of immediate care to be given to victims of road crashes the co-ordination and interaction between the different types of service providers need to be as seamless and as effective as possible.

It is important that the Department of Health and other medical sector partners work in unison to ensure that all road crash victims have access to and receive the appropriate level of emergency and post-crash health care irrespective of demographic profile or financial ability.

Timeframe: Immediate

Responsible Organization: RTMC to be the lead agent

Cost implication: **LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a) Identify and develop a database of all health sector stakeholders involved in post-crash care (RTMC & DOH)

b) Develop a continuum of care depicting the components of care required by crash victims, when it is required, who must provide it and the resources and funding needed for the provision thereof. (RTMC & DOH)
c) Identify the areas of overlap and integration but also areas where service gaps or potential conflict between role-players exists. (RTMC, DOH & PRIVATE MEDICAL SECTOR STAKEHOLDER)
d) Develop an agenda for engagement with stakeholders to address shortcomings and gaps but also areas for greater co-operation, synergy and inter-agency collaboration. (RTMC & DOH)
e) Establish a platform for regular and ongoing engagements. (RTMC & DOH)
f) Shift towards a pro-active stakeholder and relationship management model which is beneficial to all participants. (RTMC & DOH)
g) Develop and draft the required memoranda of understanding and co-operation required for improved efficiency along the post-crash continuum of care. (RTMC & DOH)

Performance Indicators:

- Number of stakeholder engagement meetings
- Number of structured interventions implemented as outcomes of such engagements
- Number of co-operative agreements reached and implemented

5A(iii) Clarification of on-scene response roles / Areas between SAPS, National Traffic Police, Metro Police, Provincial Traffic, Municipal Traffic, etc.

Motivation: In case of road crashes there are various roles to be played by first responders to the scene. In order to ensure that the crash scene is effectively managed there is a single authority assigned to take overall responsibility. Due to various agencies having the capability and the mandate to adopt this lead role, there is possibility that in some situations with multiple agencies present where the allocation of this role might not be immediately clear..

To improve the synergy and inter-agency relationships, the role of each agency at a crash scene must be clearly articulated and confirmed. The underpinning principle however must be one of co-operation, so to ensure that in the absence of any of the role-players, the crash victim will not suffer unduly or be compromised in terms of access to post crash services and support.

Timeframe: Immediate

Responsible Organization: RTMC to be the lead agent for this intervention in collaboration with all the traffic and law enforcement agencies.

Cost implication**: LOW:** This can be done within the parameters of existing budgets therefore no additional funds are required.

Staffing: Current RTMC staff, together with staff of affected agencies

Specific tasks:

a) Develop a matrix of responsibilities as it relates to actions required at the scene of a crash and the respective crash types. (RTMC, SAPS, PROVINCIAL & LOCAL GOVERNMENT TRAFFIC)
b) Assign agencies and their responsibilities to each action required including follow up actions, handovers and final data collation and inputs. (RTMC, SAPS, PROVINCIAL & LOCAL GOVERNMENT TRAFFIC)
c) Simplify, consolidate and streamline administrative processes and systems between agencies to facilitate ease of communication and interaction across the spectrum of traffic and enforcement services. (RTMC, SAPS, PROVINCIAL & LOCAL GOVERNMENT TRAFFIC)

Performance indicators:

- Improve services as reflected by fewer public complaints
- More efficient resource and personnel utilisation
- Improved inter-agency co-operation

5A(iv) Investigate the feasibility for Traffic Police to be legislated to handle fatal crash investigations

Motivation: Crash investigations are undertaken in the case of fatalities in order to reconstruct crash scenes so to establish causes and accountabilities for crashes. The accreditation of traffic officers to enable them to act as crash investigators will expand the field and number of available resources to undertake investigations. This additional capability and capacity will supplement current skill levels in the sector and provide the opportunity for accident cases to be dealt with in shorter time frames with current level of resources.

Timeframe: immediate

Responsible Organization: RTMC

Cost implication: **LOW- MEDIUM: LOW:** This can be done within the parameters of existing budgets therefore little to none additional funds are required.

Staffing: Current Traffic Officers but additional training will have to be provided.

Specific tasks:

a) Establish criteria for accreditation as a fatal crash investigator and whether the current legislative mandate for traffic offices makes provision for inclusion of this function into the service. (SAPS, PROVINCIAL AND LOCAL GOVERNMENT TRAFFIC)
b) If the legal mandate does not exist, initiate a legal process to establish clarity of function and how the mandate for local government can be amended to create this enabling environment. (PROVINCIAL AND LOCAL GOVERNMENT TRAFFIC)
c) Identify total number of traffic officers to be trained and accredited. (PROVINCIAL AND LOCAL GOVERNMENT TRAFFIC)
d) Develop a system and process of investigations in line and in collaboration with SAPS. (SAPS, PROVINCIAL AND LOCAL GOVERNMENT TRAFFIC)

Performance indicator:

- Total number of traffic officer per region or province accredited and functioning as fatal crash investigators

5A(v) Introduce technology use on crash scene to obtain precise location of crashes

Motivation: The use of technology has the capability to improve the quality and speed of post-crash care. With the rapid progress in the technological field data gathering can be simplified and systems integrated to optimise the data captured, the availability of the data in various forms and formats and ease of access to the data and information. This can in turn drive better reporting and improve the level of insights available to create strategic interventions and drive management decisions in area of safety management.

The use of technology is not a once-off intervention but should be considered as an ongoing business and process re-engineering and improvement mechanism. This intervention is therefore not about necessarily developing new technology from design phase but identifying

existing platforms that can be better utilised or improved for addressing post-crash care and drive better information gathering.

Timeframe: This intervention can commence immediately but will be ongoing

Responsible Organization: RTMC to be the lead agency

Cost implication: **MEDIUM:** Additional equipment and/technology may have to be procured and training provided.

Staffing: Capability for this intervention exists within current capacity.

Specific tasks:

a) Engage with all relevant stakeholders, in particular SANRAL, with regards available geographic information systems. (RTMC, DOH, SANRAL, SAPS & EMERGENCY SERVICES)
b) Investigate a business improvement intervention which will enable the roll-out and use of available technology by multiple stakeholders. (RTMC, DOH, SAPS & EMERGENCY SERVICES) (RTMC)
c) Evaluate crash scene reporting with regards who reports, what is reported and what reporting is required to improve the crash scene information especially regarding locations. (RTMC, DOH, SAPS & EMERGENCY SERVICES)
d) Investigate the use of cellphone technology and platforms by members of the public to improve the location accuracy of crash scene reporting.(RTMC, DOH, SAPS & EMERGENCY SERVICES)

Medium term interventions:

5A(vi) Increase crash investigation capacity at SAPS and other agencies involved with the function

Motivation: Additional capability and capacity will enhance and expand current skill levels in the sector and provide the opportunity for accident cases to be dealt with in shorter time frames. It will also create an enabling environment for thorough investigation and collation of extensive and appropriate data related to crashes and road safety.

Timeframe: To be completed by 2018

Responsible Organization: RTMC

Cost implication: **MEDIUM:** Funds may be required for expanded and adequate resourcing.

Staffing: Additional staff and training may be required based on recommendations.

Specific tasks:

a) Identify alternative funding models e.g. public private partnerships, which can fund the appointment of additional staff to execute this function. (RTMC, DEPT OF TREASURY & SAPS)
b) Investigate the options of using the other government programmes, such as the Expanded Public Works Programme or the Youth Wage Subsidy, to create job opportunities for youth within this sector. (RTMC, DEPT OF PUBLIC WORKS)
c) Develop and incentivised support programme for entrepreneurial and SMME development programme within this sector. This can be further prioritised to target youth and women owned entities (RTMC, DEPT OF ECONOMIC DEVELOPMENT)
d) Develop a support and training programme for community volunteers interested in road safety management and crash investigations in particular (RTMC and SAPS)

Long term interventions:

5A(vii) Mobilisation of intensive care ambulances for high risk rural sites

Motivation: The probability of crashes on rural roads resulting in fatalities is increased due to a myriad of factors including distances between towns, isolation of road networks and therefore crash scene locations, standard or level of emergency health care facilities and availability of emergency response units.

This intervention is closely aligned to and follows the same approach as intervention 5A(i), with the difference being that specialised intensive care ambulances are required to be available at identified rural sites.

Timeframe: Due to the geography relating to this intervention and the need for specialised vehicles the timeframe for this implementation of this intervention is 2020.

Responsible Organization: Department of Health, supported by emergency services agencies and private sector partners.

Cost implication: **HIGH:** Additional funding may be required and should be set aside for this intervention.

Staffing: To be determined based on final recommendations of the service being made available at high risk rural locations.

Specific tasks:

a) Follow the process as outlined in intervention 5A(i), but focus on addressing rural road networks that would likely have significantly less probability of crashes than urban areas
b) Identify the staffing and funding model to support the roll-out of this programme, including procurement of specialised vehicles and appointment or deployment of appropriately trained staff to these locations. (DOH & HEALTH SECTOR STAKEHOLDERS)
c) Conditions or incentive schemes to attract appropriately trained personnel to work in rural areas. (DOH &HEALTH SECTOR STAKEHOLDERS)
d) Develop, support and resource volunteer paramedics or community paramedical disciplines (an emerging health profession in other countries) programme in targeted rural areas. (DOH, & HEALTH SECTOR STAKEHOLDERS)

5A(viii) Increase the number of trained trauma medical personnel, nurses, paramedics, etc. in collaboration with the Health and Welfare Sector Education and training Authority (HWSETA).

Motivation: The Department of Health, in collaboration with Medical Schools and Universities across the country must drive this intervention to increase not only the number of medical personnel but more importantly to increase the number of personnel trained in trauma and emergency health care. This intervention to be cross-cutting across all sectors of the medical profession from paramedics to specialists.

Adequately training and specialisation will contribute to the post-crash quality of care provided to crash victims and the associated survival rates.

Timeframe: Beyond 2020

Responsible Organization: Department of Health

Cost implication: **HIGH:** Additional funding may be required and should be set aside for this intervention.

Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a) Develop and provide specialised training and development opportunities for personnel interested trauma and emergency training. (DOH & Medical Schools)
b) Pro-actively promote trauma and emergency training as electives and areas of specialisation. (DOH & Medical Schools)

5A(ix) Incentivise Private Health establishments to treat road crash victims

Motivation: The cost to provide emergency health care to crash victims is covered by medical insurance companies, the government or the victim. In order to provide quality emergency response care to all crash victims, regardless of affordability and without putting the burden of care on the victim alternative service delivery models must be explore.

Incentivising private health establishments to treat any crash victim is one option but other alternative funding models must also be considered.

Timeframe: Beyond 2020

Responsible Organization: DoH

Cost implication: **MEDIUM – HIGH:** Additional funding may be required and should be set aside for this intervention.

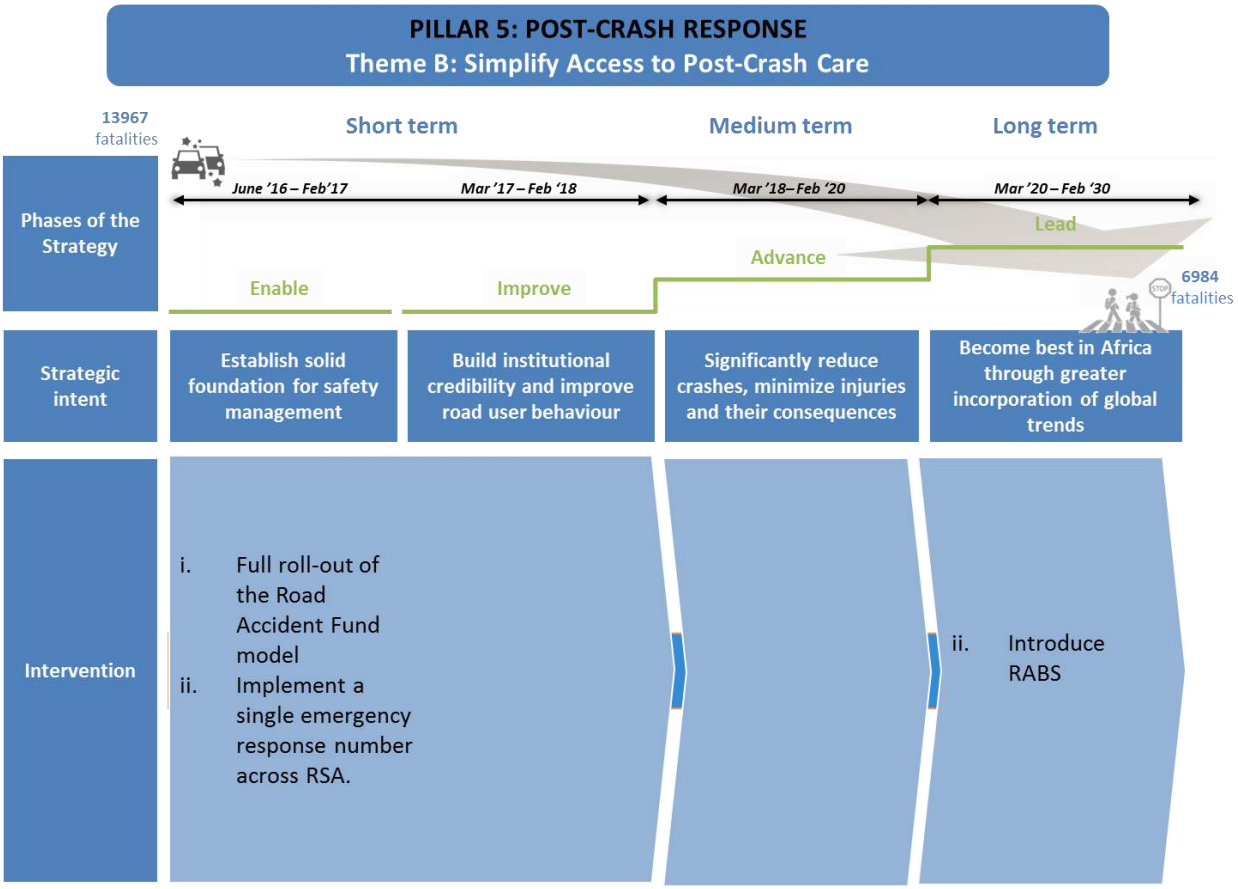
Staffing: Capability for this intervention exists within current capacity but may be supplemented with external assistance.

Specific tasks:

a) Investigate incentive schemes to encourage private health care facilities to share the burden of emergency response treatment for crash victims. (DOH and Private Health Care Stakeholders)
b) Investigate alternative funding models including private public partnerships. (DOH and Private Health Care Stakeholders)
c) Develop a model which places the survival and treatment of the crash victim at the centre, in that all costs associated with the treatment is free to the patient but borne by contributions made by private sector insurance companies to a central fund. (DOH, Insurance Companies and Private Health Care Stakeholders)

5B: simplify access to post-crash care

PILLAR 5 Post-Crash Response	A. Improve first response effectiveness
	B. Simplify access to post-crash care



Short term interventions:

5B(i) Full roll-out of the Road Accident Fund model to improve access to quality healthcare and to make the application for financial assistance efficient and easily accessible to all communities

Motivation: RAF represents the only source of compensation for people who have been injured or lost their lives in accidents where are inactive participants in the road accident treatment itself. Road users involved in road crashes that suffer injuries are required to submit a claims form to received compensation. The RAF is currently engaged in a roll out program to bring the services of the RAF to the attention of the broader public and attempt to simplify the access to the fund.

Timeframe: 12 months

Responsible Organization: RAF

Cost implication: **MEDIUM**: The RAF is funded entirely from the fuel levy. A further R0,50 increase in the levy is proposed to cover the cost of the existing funding backlog and current annual claims (which stand in excess of R30-billion). There is an option to partner with the private sector insurance industry to look at mechanisms to create incentives for minimising the number and severity of crashes.

Staffing: RAF currently employs more than 500 people. It is proposed that staff at private and public hospitals are trained to provide guidance to road accident victims to assist with the initial processes for RAF claims

Specific tasks:

a. The RAF to call a joint sitting with Council of Medical Schemes; Council of Private Hospitals; the Department of Health to support in the identification on how to improve

post-crash healthcare services and improve the mechanism for road users involved in crashes to access the RAF.

b. The RAF to call a joint sitting with short term insurers to identify at possible incentivising mechanisms to promote improved driver behaviour

5B(ii) Implement a single emergency response number across South Africa

Motivation: Modern communication technology enhances the opportunities available to create a single emergency response number for the country. A single call centre will put the citizen at the centre of the emergency service offering, as it enables an easily accessible emergency service for all. It also enables synergy and integration amongst emergency responders which supports an overall approach of co-operation and integration amongst emergency services and in particular those related to road safety.

Technology is at the centre of this intervention, not only as it enables communication but also accuracy of data relating to identification of the locations of callers, management of resource assignment, record of reporting information, etc.

A single emergency number will respond to a need beyond the scope of this strategy and road safety management. It also provides an opportunity to integrate and utilise existing resources assigned to current emergency call centres.

Timeframe: Development and resourcing of this intervention will influence the timeline for this intervention.

- Year one (2017) - Feasibility study and Option Modelling
- Year two (2018) - Design and Development of the system
- Year three (2019) – Launch of single emergency number and emergency call centre system

Responsible Organization: RTMC

Cost implication: **Medium:** Funds may be required for expanded capacity and adequate resourcing.

Staffing: Staff currently operating various emergency call centres can be re-assigned. However, it is a new organisational arrangement and creates an employment opportunity for youth and young adults. Staffing levels will be determined by the organisational structure required to operationalise this intervention.

Specific tasks:

a. Appointment of a service provider to conduct a feasibility study and costing model for the development and implementation of a single emergency contact centre (LEAD AGENCY/ DEPT OF TELECOMMUNICATION)
b. Consideration and approval process for feasible recommendations generated (LEAD AGENCY, SAP, DoT AND DOH)
c. Design and development of the system including technology required, system design and architecture, institutional and management arrangements, organisational design and resource and funding plan (LEAD AGENCY/DEPT OF TELECOMMUNICATION)
d. Implementation and launch of single national emergency number and call centre system

Performance indicators

- Feasibility study and costing model
- Developed system

- Launch of emergency number and call centre system

5B(iii) Introduce RABS

Motivation: RABS is intended to replace the current fault-based system administered by the Road Accident Fund (RAF), which often results in extensive and costly litigation, prolonged claims finalisation and high administrative costs. Under RABS, fault will not be considered on the part of the claimant or other persons involved in the road accident. The focus will essentially be on how the claimant is immediately assisted. A no-fault scheme will create a new era of socio-economic balance and will also remove the unintended negative consequences and financial burden on the families of the wrongdoer.

Timeframe: Medium term

Responsible Organization: DoT & RAF

Cost implication: **HIGH:** Additional funding may be required and should be set aside for this intervention.

Staffing: Existing and new staff with adequate training

Specific tasks:

a. RABS is already being driven by the DoT.