Session 2.1 Recap of Day 1

Conducting Road Safety Audits & Appraisals

Presented by: RTS & AGTT

January 2022

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Goals and Highlights: 2 Day Course

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What are the Goals of this 2-day Course?

Gain an understanding of what is involved in the improvement of road safety.

- What is the general perception about improving road safety?
- What information do we get from the media about road safety?
- Will comprehensive knowledge make all the difference?

Have the knowledge and tools to make a difference, within your sphere of influence.

- You have to be a road safety ambassador yourself.
- You will know the role players (organisational).
- You will know what is a RSA and what is involved technically.
- You will know what actions need to be taken and how to initiate those actions.

2-DAY COURSE OBJECTIVES

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NOTES ON CRASH STATISTICS

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Keep in mind when look at collision statistics

NOTES ON CRASH STATISTICS

- Countries with comparable "GINI coefficients" should be preferably compared
- In Africa, countries with diligent record keeping appear to fare worst.
- The method of fatality reporting may have an influence.
- The annual growth in vehicle population plays a role
- The composition of the vehicle population plays a role
- The composition of the commuter population plays a role (age, preference, etc.)
- Statistical significance plays a role over longer periods

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GLOBAL AND REGIONAL STATISTICS

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Leading Causes of Mortality - Global

RANK	LEADING CAUSE 2004	%		RANK	LEADING CAUSE 2030	%
1	Ischemic heart disease	12.2		1	Ischemic heart disease	12.2
2	Cerebrovascular disease	9.7		2	Cerebrovascular disease	9.7
3	Lower respiratory infections	7.0		3	Chronic obstructive pulmonary disease	7.0
4	Chronic obstructive pulmonary disease	5.1		4	Lower respiratory infections	5.1
5	Diarrhoeal diseases	3.6		5	Road traffic injuries	3.6
6	HIV/AIDS	3.5		6	Trachea, bronchus, lung cancers	3.5
7	Tuberculosis	2.5		7	Diabetes mellitus	2.5
8	Trachea, bronchus, lung cancers	2.3		8	Hypertensive heart disease	2.3
9	Road traffic injuries	2.2		9	Stomach cancer	2.2
10	Prematurity and low birth weight	2.0		10	HIV/AIDS	2.0
11	Neonatal infections	1.9		11	Nephritis and nephrosis	1.9
12	Diabetes mellitus	1.9		12	Self-inflicted injuries	1.9
13	Malaria	1.7		13	Liver cancer	1.7
14	Hypertensive heart disease	1.7		14	Colon and rectum cancer	1.7
15	Birth asphyxia and birth trauma	1.5		15	Oesophagus cancer	1.7
16	Self-inflicted injuries	1.4		16	Violence	1.4
17	Stomach cancer	1.4		17	Alzheimer and other dementias	1.4
18	Cirrhosis of the liver	1.3		18	Cirrhosis of the liver	1.3
19	Nephritis and nephrosis	1.3		19	Breast cancer	1.3
20	Colon and rectum cancers	1.1		20	Tuberculosis	1.1

SOURCE: WHO

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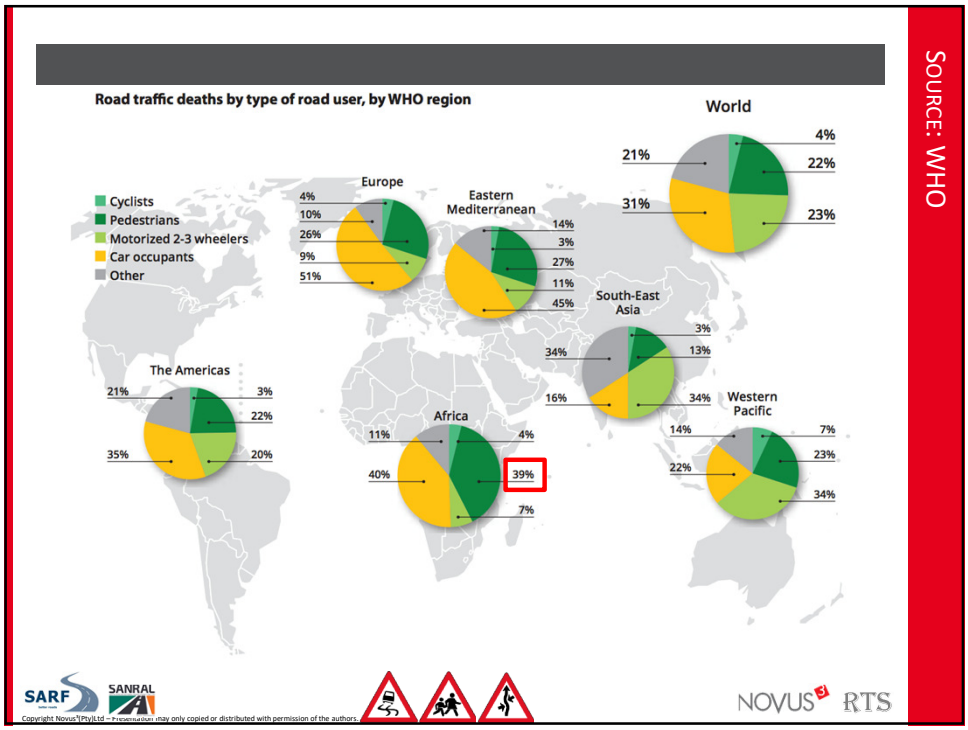

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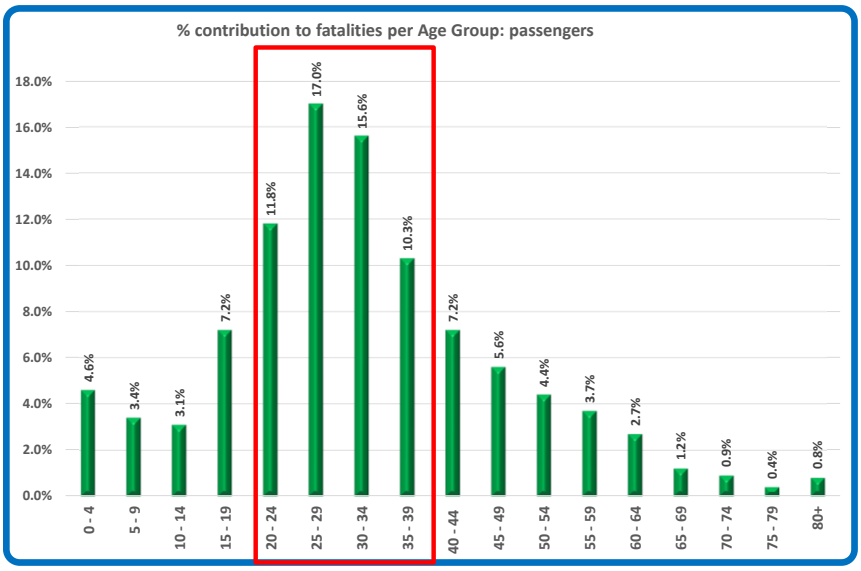
Percentage Contribution to Fatalities per Age Group: Passengers



SOURCE: RTMC

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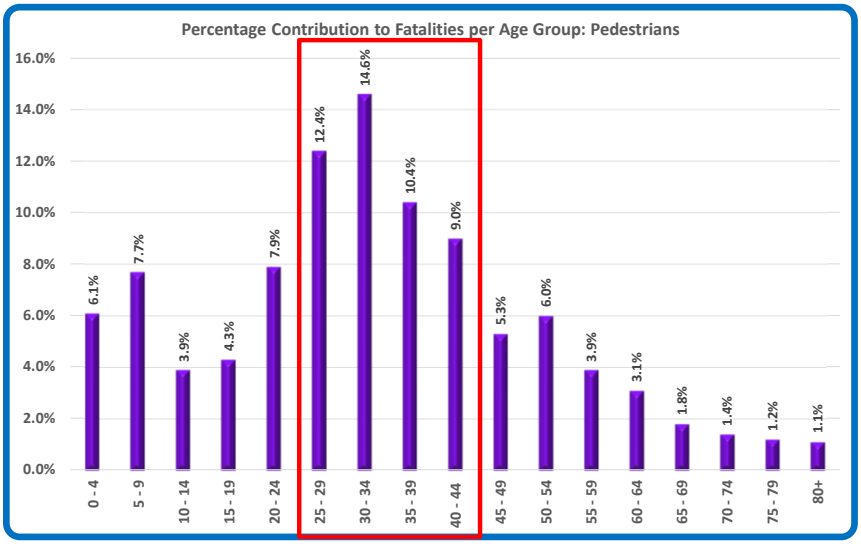
Percentage Contribution to Fatalities per Age Group: Pedestrians



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THE HOLISTIC APPROACH TO ROAD SAFETY

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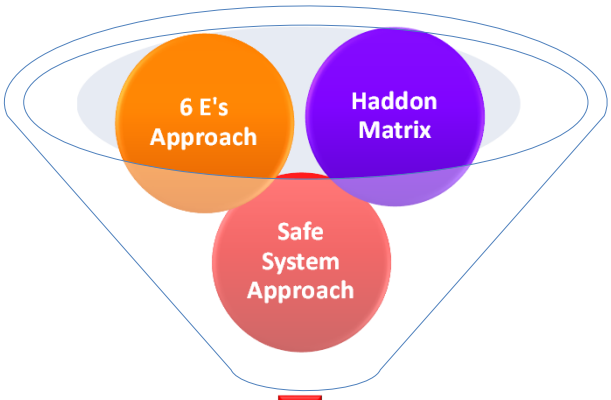
Existing, globally accepted road safety approaches.



Improvement in Road Safety

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The E's of Road Safety: 3, 4 and 6 Es

- Enforcement strategies
- Engineering strategies
- Education Strategies
- Emergency Response Strategies
- Empowerment Strategies
- Evaluation Strategies

HOLISTIC APPROACH TO ROAD SAFETY

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Haddon Matrix

		Human factors	Vehicle factors	Road /Environment factors
PRE-CRASH	**Crash prevention**	Education Training Attitudes Enforcement Behaviour	Roadworthiness Crash avoidance system	Safe Road design Maintenance
CRASH	**Injury prevention**	Use of restraints	Restraints & Air bags Crash-worthiness	Protection and assistance Barriers, road verges, arrestor beds
POST-CRASH	**Life sustaining**	First aid skill Access to EMS	Ease of access Fire risk	Road verges Alternatives

ROLES AND RESPONSIBILITIES

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(WHO) 2004 Injury Prevention Report recommends a Safe System Approach

HOLISTIC APPROACH TO ROAD SAFETY

Safe System Approach

Humans drive, walk, cycle etc.:

- In the road environment;
- Influenced by:
  - Education related to the use of the road system;
  - Information from the road environment; and
  - Enforcement of road rules.
- ➢ Perception of safety and crash risk.
- Humans as a (varying) limited ability to process information during a potential crash situation.
- Need to promote and design:
  - Safer vehicles;
  - Forgiving roads and roadsides;
  - Appropriate (safer) speeds.
  - Given that human body can sustain limited physical force.

Safer travel, with alert road users, making the correct choices with regard to the use of the roadway.

Source: RTMC SARSAM (2012), from Austroads.

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UNDERSTANDING RISK

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Factors Influencing Exposure to Risk

Economic factors
- E.g. Social deprivation

Demographic factors
- E.g. Population density

Land use planning
- Influences length of trip and mode choice

Commuter composition
- Mixture of speed differential

Road design
- Diligence, standards, adherence, audits, value engineering.

SOURCE: WHO

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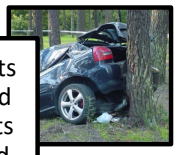
Risk Factors Influencing Crash Severity

Human Tolerance Factors

Inappro-priate or excessive speed

Seat-belts and child restraints not used



Crash helmets not used by cyclists/ motorcyclists

Road-side objects not crash protected

Insufficient vehicle crash protection

Use of alcohol and other drugs

SOURCE: WHO

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Risk Factors Influencing Severity of Post-Crash Injuries

SOURCE: WHO

Delay in detecting crash

Presence of fire resulting from crash

Leakage of hazardous materials

Presence of alcohol and other drugs

Difficulty rescuing or extracting people

Insufficient pre-hospital care

Insufficient emergency and hospital care

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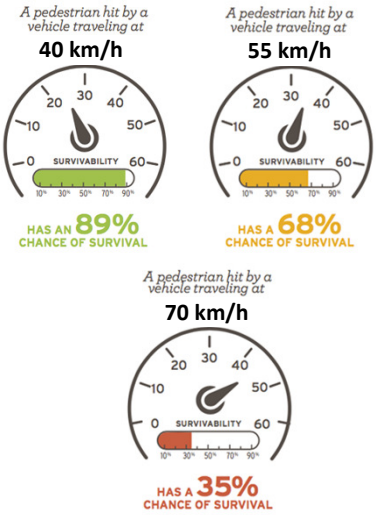
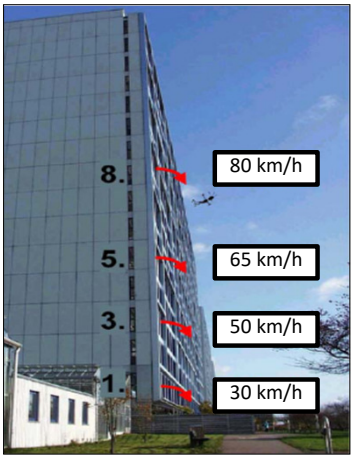
Vehicle speed and NMT safety

NEED FOR NMT SAFETY STUDIES





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Resulting Level of Risk

SEVERITY	FREQUENCY: Frequent	Probable	Occasional	Remote
Catastrophic	Intolerable	High	High	Medium
Serious	High	High	Medium	Medium
Minor	High	Medium	Medium	Low
Negligible	Medium	Medium	Low	Low

The suggested treatment action shown is indicative only. Road authorities should review the levels of risk that they would be prepared to take and develop a particular policy pertaining to the utilisation of Risk Assessment as part of road safety auditing and revise the suggested treatment actions to fit such a policy. This policy should then be implemented consistently.

SOURCE: RSM

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ROAD SAFETY MANAGEMENT

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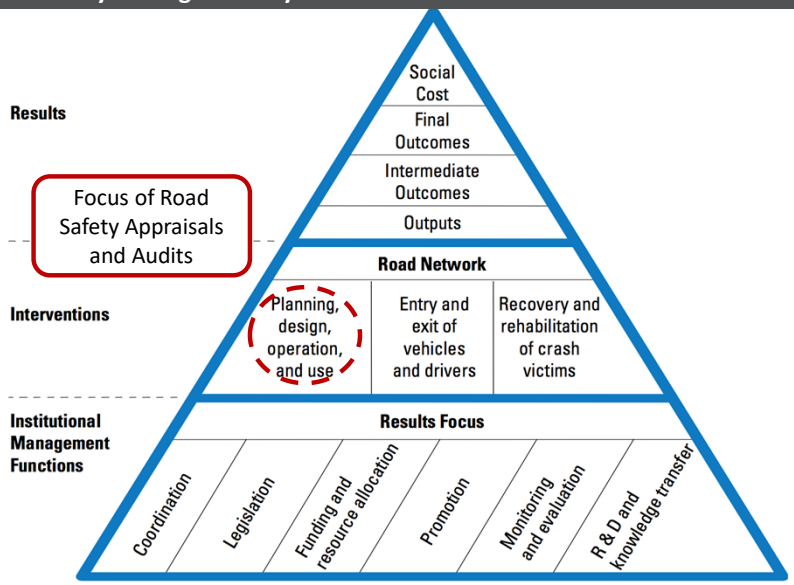
Road Safety Management System



Source: Bliss, T, and Breen, J, 2009, 'Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects', World Bank Global Road Safety Council, Washington D.C.

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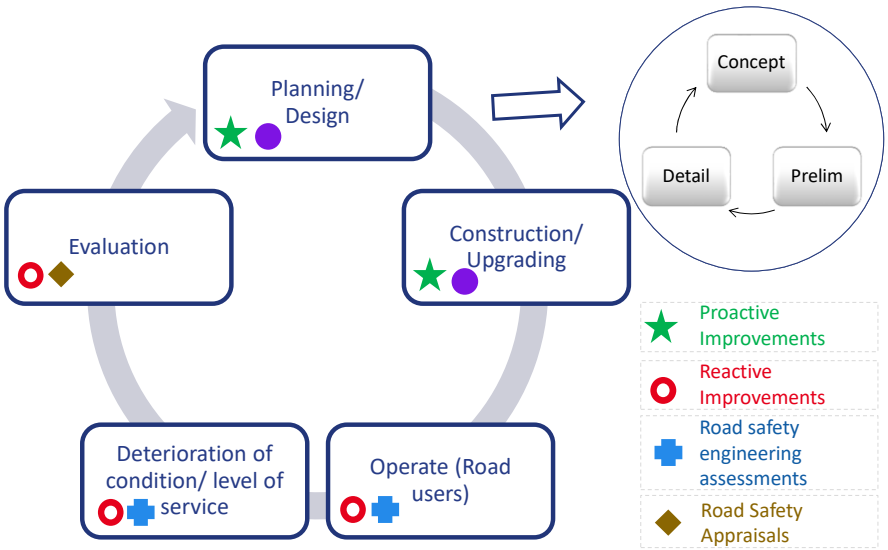
Road Safety Management



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ROAD SAFETY AUDITS

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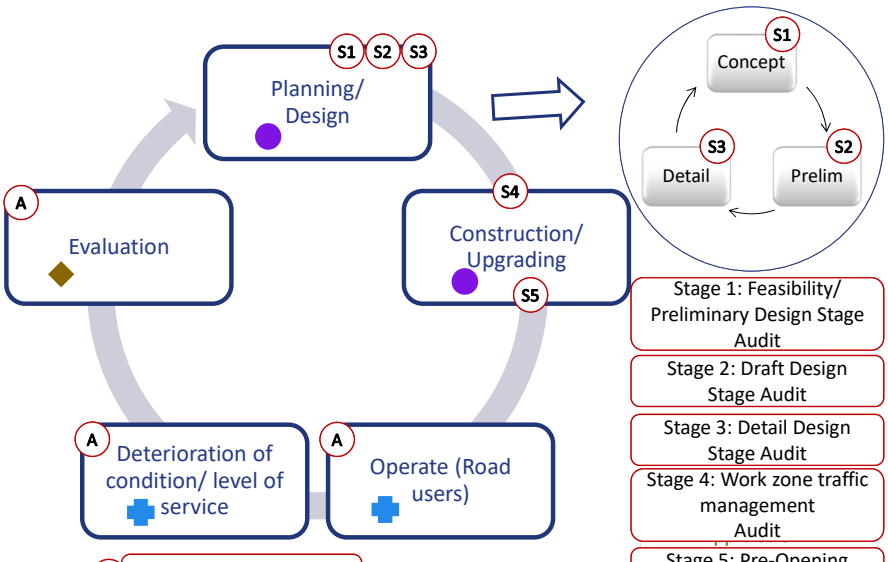
Road Safety Audit Stages



Stage 1: Feasibility/ Preliminary Design Stage Audit

Stage 2: Draft Design Stage Audit

Stage 3: Detail Design Stage Audit

Stage 4: Work zone traffic management Audit

Stage 5: Pre-Opening Stage Audit

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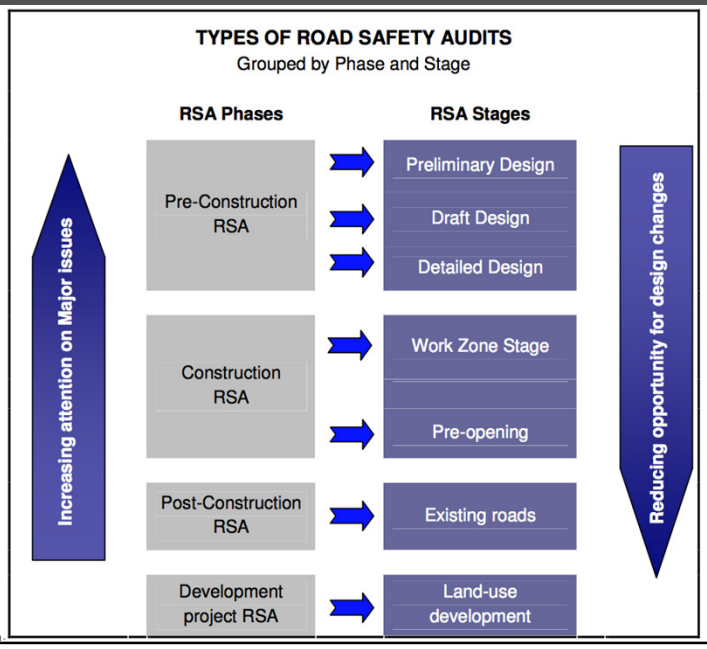
Road Safety Audit Stages



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ROAD SAFETY PROCESS

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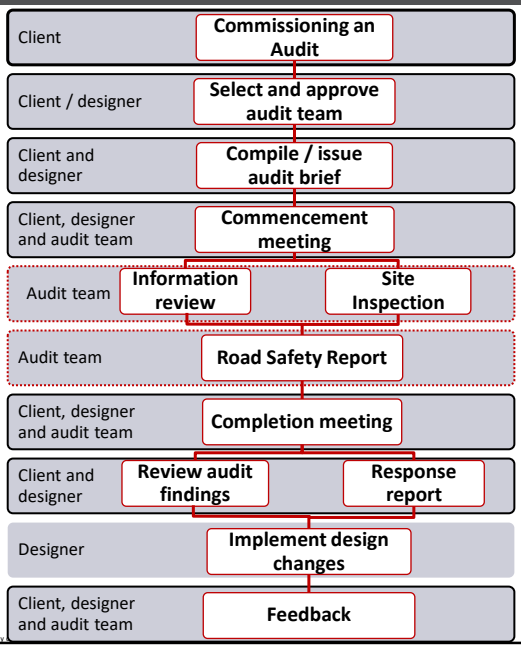
Road Safety Audit Process



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SOUTH AFRICAN ROAD SAFETY STRATEGY 2016-2020

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United Nations Decade of Action 2011 - 2020

- 1,3 mil people killed annually.
- 20-50 million injured per annum.
- 46% of deaths are vulnerable road users.

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THE NEED FOR AND LEGAL IMPLICATIONS OF RSAS

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National Road Safety Strategy 2016 - 2030

Strategic Target: Reduce road fatalities with 50% by 2030

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
Improve coordination and management	Identify and address **high road safety risk** and **hazardous locations**	Increase vehicle safety standards	Improve road user behaviour & involve communities in road safety education and awareness programmes	Improve effectiveness of first responses
Improve road safety data	Provide self- explaining and forgiving road envi-ronment for all road users	Ensure vehicles on the road network are roadworthy	Improve enforcement effectiveness	Simplify access to post-crash care
Eliminate fraud and corruption	Implement **road safety audit programme** on new and upgraded road infrastructure projects		Increase protection for VRU's	
Ensure adequate funding and capacity				
Enhance use of technology to protect road users				

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THE NEED FOR AND LEGAL IMPLICATIONS OF RSAS

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LEGAL IMPLICATIONS OF DOING/NOT DOING RSAs

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Legal implications of doing/not doing RSAs

Need to consider to basic South African legal principles

Criminal Law

- Offence against public interest - Contravention of common law or a statutory offence.
- State must prove guilt beyond all reasonable doubt.
- Road authorities have statutory duties: the planning, design, construction, operation, management, control, maintenance and rehabilitation of roads.
- Will be liable if it can be proven that an authority has done/failed to do something a reasonable authority would not/have done.
- The aim of the law is to punish the person responsible.

Law of Delict (negligence)

- Infringement against a person's rights
- Damage due to a fault by the wrongdoer, which could be intentional or negligent.
- Action is brought by the person who suffered the loss - must prove delict on balance of probabilities.
- Organs of state or administrators do not have delict immunity.
- Must prove breach of statutory duty. A person must suffer material damage, which would not have been the case if the duty was carried out.
- The aim of the law is to compensate the person who suffered the loss.

THE NEED FOR AND LEGAL IMPLICATIONS OF RSAS

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Benefits of a Road Safety Audit

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Cost of Road Crashes in South Africa

Unit Cost per Road Traffic Crash (Rand)				
Fatal	Major	Minor	Damage only	Any severity
R5 435 261	R765 664	R152 244	R48 533	R171 727

Unit Cost per Road Traffic Injury (Rand)			
Death	Serious	Slight	No injury
R3 916 187	R423 858	R71 352	R1 085

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Expected Outcome of a Road Safety Audit

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Procedure to deal with audit findings

Audit recommendations are not mandatory, but do require a formal response with reasons or a plan of action for each finding.

Each finding in the Road Safety Audit Report can be dealt with by

- *Accepting the problem and the proposed recommendation; initiating the remedial action.*
- *Accepting the problem in principle, but due to other constraints, implement a partial or different solution.*
- *Not accepting the finding or recommendation at all.*

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EXPECTED OUTCOME OF A ROAD SAFETY AUDIT

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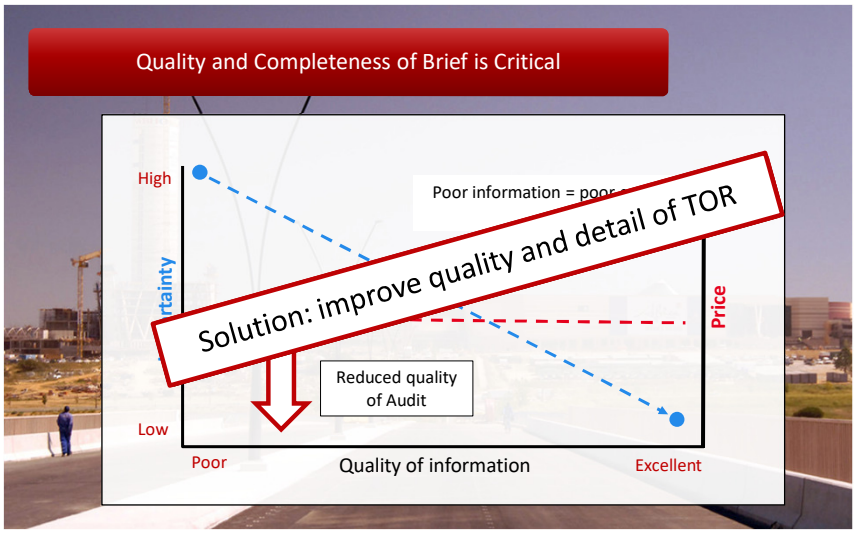
Importance of the TOR



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THE ROAD SAFETY AUDIT TERMS OF REFERENCE

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END OF LECTURE

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