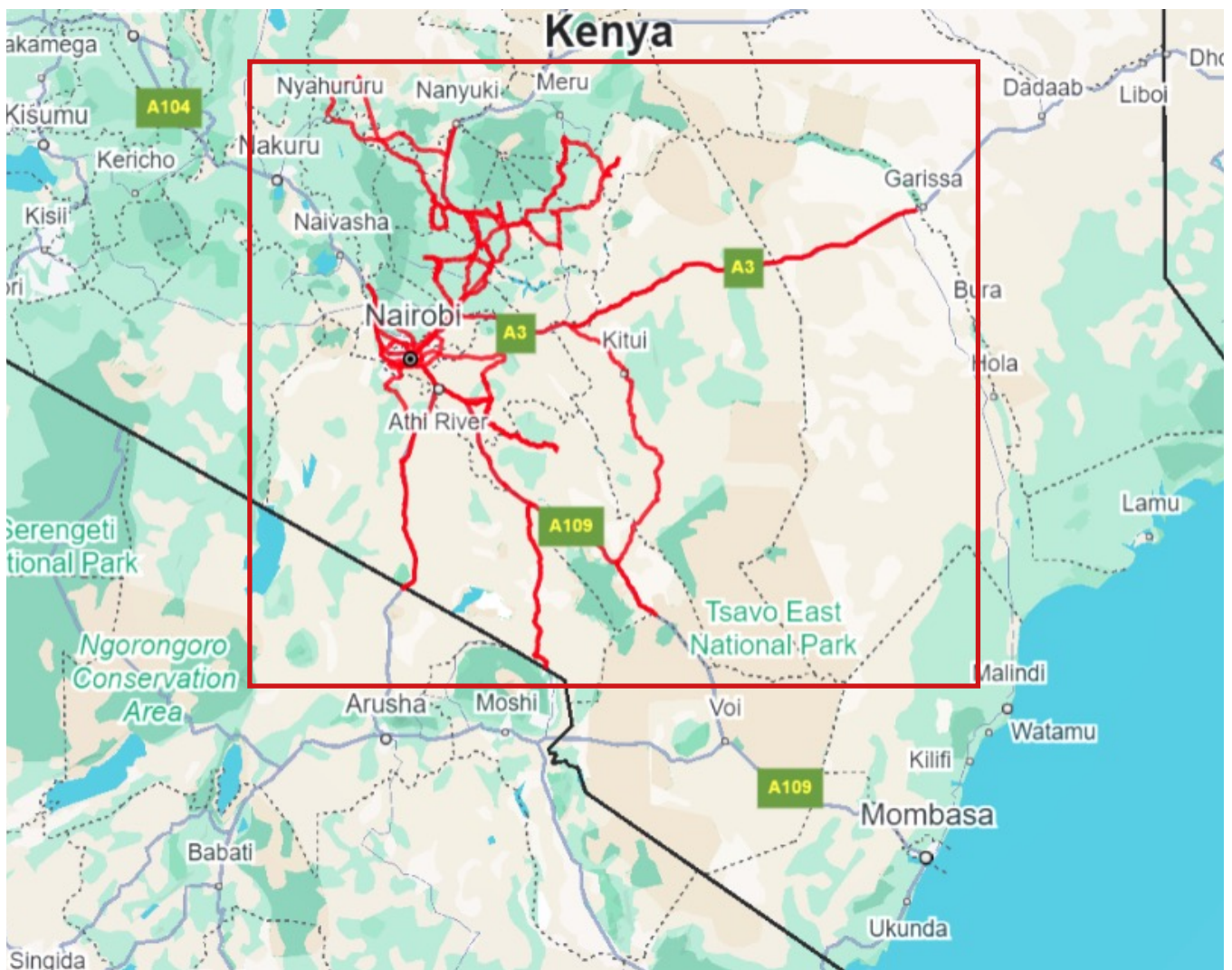
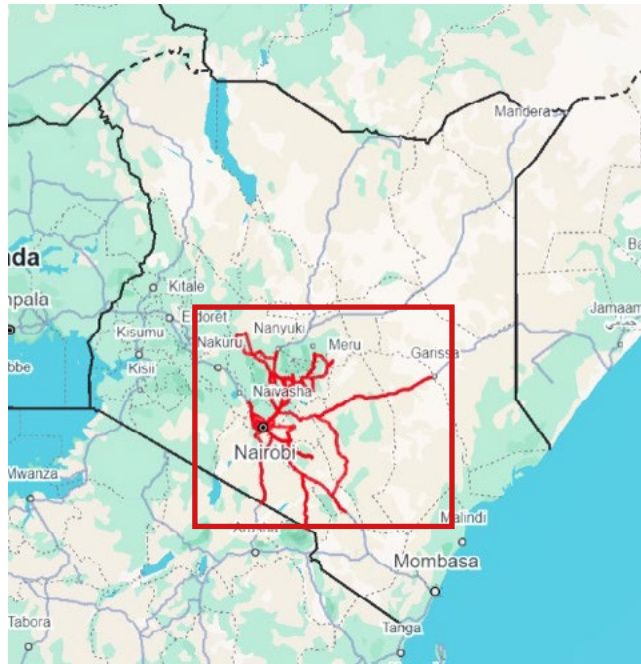




DIRECTORATE OF PETROLEUM AND GAS
DRIVER'S HANDBOOK
SURVEYED ROADS WITHIN COUNTIES IN
NAIROBI AND CENTRAL REGIONS



Disclaimer

This handbook may only be reproduced and shared for the purpose of learning and promotion of safe petroleum industry best practices upon written consent by the Energy and Petroleum Regulatory Authority (the Authority). It is not intended for advertisement, endorsement and/or commercial purposes. The Authority does not necessarily own each component of the material contained within the work and shall therefore not be liable for any misrepresentation whatsoever in this publication. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright owner. The contents herein do not represent the Authority's opinion and the reader is advised to consult appropriate legal instruments for any verification. It is the responsibility of the reader to ensure they update themselves regularly on any changes to the Road Traffic or Occupational, Safety and Health legislations relevant to their duties and Transport Regulations. The handbook may not be relied upon for any litigation and/or insurance claims.

Table of Contents

Foreword	5
Definitions	6
Acronyms.....	7
Acknowledgment	8
Executive Summary.....	9
Introduction	10
1.0 Legal Framework.....	11
1.1 EPRA's Mandate on Road Safety	11
1.2 Other Functions of EPRA	11
1.3 Scope of the Handbook	12
2.0 General Characteristics of Risks Associated with Road Traffic Accidents.....	13
3.0 Driver's Section	14
3.1 Legal Requirements	14
3.2 Professional Code of Conduct- "DOs" and "DON'Ts"	14
3.3 Cabin Safety	17
3.4 Driver Behaviour.....	18
3.4.1 Journey Planning.....	18
3.4.2 Act Appropriately.....	18
3.4.3 Exercise Defensive Driving Skills at All Times.....	23
3.4.4 Avoid Drugs and Alcohol	24
3.4.5 Smoking	24
3.4.6 Fitness to Drive.....	25
3.4.7 Use of Electronics and other Communication Devices	25
3.4.8 Personal Protective Equipment for Drivers	25
3.4.10 Vehicle Stability on the Highway	26
3.5 Fatigue Management	26
3.6 Pre-Journey Inspection.....	27
3.7 Safe Actions During Vehicle Breakdowns	28
3.8 Safe Actions During Vehicle Maintenance.....	28
3.9 Safe Loading and Unloading	28
4.0 Vehicles Section	30
4.1 Regulatory Requirements	30
4.2 Reflective Tapes and GPS Tracking Device.....	30
4.3 Vehicle Standards.....	31
4.4 Accident Reporting and Management.....	32
5. Road Infrastructure Section	33
5.1 Classification of Roads.....	33
5.2 Speed Limits	33
5.3 Road Terrain	34
5.4 Erosion.....	34
5.5 Traction Stability Vs Weather Conditions.....	35
5.6 Traffic Volume	35
6.0 High Risk Zones Along Selected Routes	36
6.1 Nairobi Region.....	36
6.2 Central Region	44
7. Interventions to Improve Safety During Transportation of Petroleum Products	59
7.1 Safe Systems Approach.....	59
7.2 Highway Emergency Response Plan (HERP).....	60
8.0 Stakeholder Responsibilities on Road Safety	62
9.0 General Offences.....	63
10.0 Conclusion	64
Recommendations.....	65
References	66
Appendix-1: Classification of Roads in Kenya	67
Appendix-2: Details of Number of Lanes of Multi-Lane Roads in Nairobi City	70
Appendix-3: Hazard Class Warning Symbols.....	71
Appendix-4: Contribution to RTA Fatalities Associated with Time.....	72
Appendix-5: Leading Causes of RTA Fatalities	72
Appendix-6: Distribution of RTA Fatalities by Counties	73
Appendix-7: RTA Fatalities by Vehicle Type.....	73

Foreword

The UN General Assembly's second Decade of Action for road safety (2021-2030) aims at reducing the forecasted level of global road traffic fatalities and serious injuries by at least half (50%) by 2030. The resolution calls upon Member States to implement road safety activities in the areas of road safety management, road infrastructure, vehicle safety, road user behaviour, road safety education and the post-crash response.

Kenya being a signatory to this Decade of Action, established the National Transport and Safety Authority by the NTSA Act of 2012, as a lead agency on matters road safety. Data from NTSA indicate that human error is responsible for over 98% of Road Traffic Accidents (RTAs), placing considerable strain on both the economy and the healthcare system. The Oil and Gas (O&G) sector accounts for about fifty-five percent (55%) of the global energy consumption. In Kenya and the wider East African Community (EAC) region, road transport plays a critical role in the distribution of petroleum products across the value chain.

Driver behaviour has been identified as a primary factor influencing the occurrence of RTAs. Consequently, this Handbook has been developed to raise awareness among petroleum tanker drivers regarding the risks inherent to their profession and to promote safe driving practices. It provides clear guidance on the expectations of drivers in relation to vehicle condition, journey planning, and driving conduct. By adhering to the principles and recommendations outlined in this handbook, stakeholders will be better positioned to fulfil their legal obligations concerning road safety and responsible work practices.

Daniel Kiptoo Bargoria, MBS, OGW
DIRECTOR GENERAL

Definitions

Blind Spot:	Area around a vehicle that cannot be directly observed by the driver.
Carriageway:	The section of the road designated for vehicles.
CR12:	An official confirmation issued by the Registrar of Companies, providing details of a company's directors, shareholders, shareholdings, registered office, and any debentures or charges registered against it.
Dos and Don'ts:	In this context refers to the author's guide on what the driver is expected to do and not to do under certain circumstances while undertaking the driving task.
Hazard:	Something on the road, which has the potential to affect the vehicle or driver's concentration leading to an incident or accident that may cause harm to people (injury, illness, death, psychological trauma), property (damage, contamination, wastage) or environment (pollution).
Highway Code:	Document that contains Rules and Guidelines on how to use the road.
Interchange:	A road junction that typically uses grade separation, and one or more ramps, to permit traffic on at least one highway to pass through the junction without directly crossing any other traffic stream.
Road Shoulder:	Refers to the portion of the roadway continuous with the carriageway for accommodation of stationary vehicles, for emergency use and for lateral support of the pavement.
Super Highway:	A highway designed for travel at higher speeds but within the speed limit. It may have two or more lanes for each direction of travel.
Vehicle:	Refer to petroleum or LPG tanker, where not specified any other type of vehicle including three-wheelers.
Walkway:	A section of the road designated for pedestrians. It may also be called the footpath or side walk.

Acronyms

ATLM	Audio-Tactile Line Marking
BAC	Blood Alcohol Concentration
CCTV	Closed- Circuit Television
DOSHS	Directorate of Occupational Safety and Health Services
EAC	East African Community
EMCA	Environmental Management and Coordination Act
EPRA	Energy and Petroleum Regulatory Authority, the Authority.
GPS	Global Positioning System
ID	Identification Document
KEBS	Kenya Bureau of Standards
KeNHA	Kenya National Highways Authority
LN	Legal Notice
LPG	Liquefied Petroleum Gas
NEMA	National Environment Management Authority
NITA	National Industrial Training Authority
NMHA	Near Miss and Hazard Alert
NTSA	National Transport and Safety Authority
OMC	Oil Marketing Company
RTA	Road Traffic Accidents
VLCA	Vehicle Load Control Act, 2016

Acknowledgment

Sincere gratitude goes to the staff and management of the Directorate of Petroleum and Gas, the Energy and Petroleum Regulatory Authority (EPRA) who facilitated the development and publication of this work. The handbook has been developed as a tool for petroleum tanker drivers to help them understand and manage the risks that they face when driving. It is intended to assist the drivers make safer choices about the way they drive and behave around vehicles. Though a guidance document, implementation of the contents in this handbook will enhance road safety and significantly contribute towards the Authority's regulatory mandate of promoting safe transportation of petroleum products.

Executive Summary

The Oil and Gas (O&G) sector accounts for approximately fifty-five percent (55%) of global energy consumption. However, operations within this sector are frequently associated with hazards that pose significant risks to the health, safety, and wellbeing of employees, the public, and the environment. In Kenya and the broader East African Community (EAC) region, road transport plays a critical role in the distribution of petroleum products across the value chain. Nevertheless, the operation of petroleum tankers is recognised as one of the most hazardous occupational activities.

Globally, road traffic accidents (RTAs) are a leading cause of morbidity, disability, and mortality, with profound economic and societal costs. In Kenya, data from the National Transport and Safety Authority (NTSA) indicate that human error is responsible for over 98% of RTAs, placing considerable strain on both the economy and the healthcare system. Each year, more than 3,000 lives are lost on Kenyan roads. Over the past three decades, road traffic fatalities have increased four-fold. Alarmingly, more than 75% of those affected are economically active citizens, with pedestrians and passengers accounting for approximately 80% of fatalities. These incidents are, however, largely preventable.

Driver behaviour is a primary factor influencing the occurrence of RTAs. This Driver's Handbook has been developed to raise awareness among petroleum tanker drivers regarding the risks inherent to their profession and to promote safe driving practices. It provides clear guidance on the expectations of drivers in relation to vehicle condition, journey planning, and driving conduct.

By adhering to the principles and recommendations outlined in this handbook, stakeholders will be better positioned to fulfil their legal obligations concerning road safety and responsible work practices.

Introduction

Kenya, along with the wider East African Community (EAC) region, is heavily reliant on imported petroleum products to support socio-economic development. Road transport plays a vital role in the petroleum supply chain, facilitating the final stage of distribution to end users. Each year, the industry handles the loading and transportation of over nine million litres of petroleum fuels and approximately three hundred thousand tonnes of Liquefied Petroleum Gas (LPG).

In recent years, Kenya has witnessed several tragic fuel tanker explosions, leading to significant loss of life and prompting heightened concerns regarding road safety and emergency response preparedness.

Current statistics indicate that road traffic accidents (RTAs) result in the loss of approximately 5% of the nation's Gross Domestic Product (GDP), amounting to an estimated KES 450 billion annually. These incidents predominantly arise from unsafe acts and hazardous conditions—factors that are largely preventable through a combination of Engineering Controls, Public Education, Enforcement, and Positive Behavioural Reinforcement.

In fulfilment of its mandate to regulate the transportation of petroleum products, the Energy and Petroleum Regulatory Authority (EPRA) has developed this Driver's Handbook. Its purpose is to raise awareness among petroleum tanker drivers of the risks associated with their work and to provide practical guidance on how to effectively manage these risks.

The handbook details the responsibilities of drivers in relation to vehicle readiness, journey planning, and driving conduct. Through increased safety awareness, and in tandem with stricter enforcement of safety regulations, this initiative aims to significantly reduce the incidence of RTAs as well as promote the long-term compliance and sustainability of the sector.

1.0 Legal Framework

The development of this handbook has been informed by a comprehensive legal and regulatory framework, including the Energy Act No. 1 of 2019 (the Energy Act), the Petroleum Act No. 2 of 2019 (the Petroleum Act), the Traffic Act (CAP 403), the National Transport and Safety Authority (NTSA) Act, 2012, and the East African Community Vehicle Load Control Act, 2016 (EACVLCA). It also draws upon the Energy (Licensing of Petroleum Road Transportation Businesses) Regulations, 2013 (Legal Notice No. 8 of 2014), as well as the Energy (Licensing of Petroleum Road Transportation Businesses) (Amendment) Regulations of 2019 (Legal Notice No. 99 of 2019), among other relevant statutes.

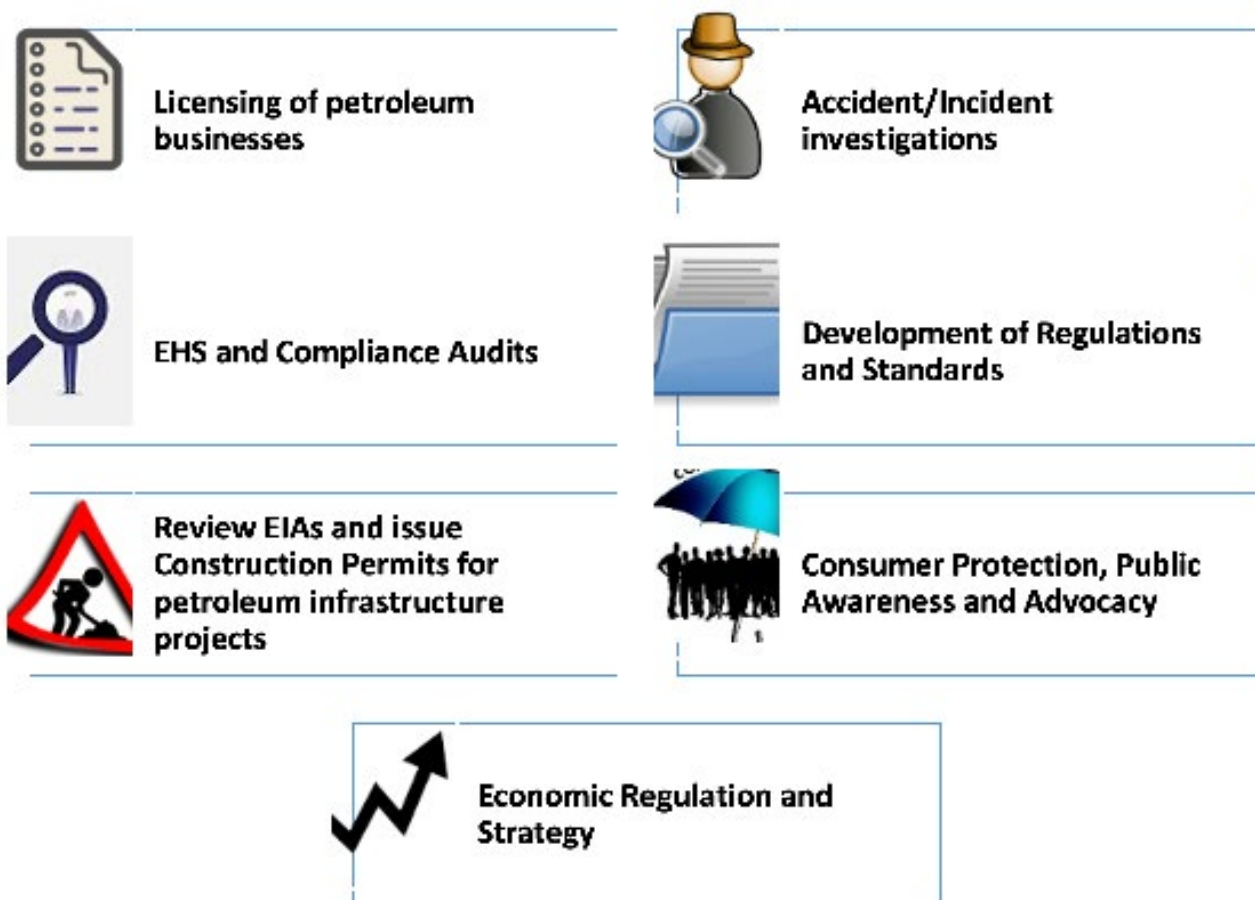
In addition, the handbook integrates applicable laws, regulations, codes of practice, and other safety, environmental, and social considerations, with the aim of promoting a consistent and sustainable approach to petroleum road transportation in Kenya and the broader region.

1.1 EPRA's Mandate on Road Safety

EPRA is established under Section 9 of the Energy Act and implements the provisions of both the Energy Act and the Petroleum Act.

- a) Section 10 (a) (ii) of the Energy Act mandates EPRA to regulate among others, transportation of petroleum products.
- b) Section 11(g) of the Energy Act empowers EPRA to formulate, set, enforce and review environmental, health, safety and quality standards for the energy sector in coordination with other statutory authorities.
- c) The Petroleum Act stipulates the overall regulatory framework for the petroleum subsector in Kenya.
- d) Section 74 of the Petroleum Act obligates any person who wishes to undertake transportation of petroleum business to acquire a valid licence for the vehicle and ensure that the driver has a Driver Certificate issued by EPRA.
- e) Section 97 of the Petroleum Act sets out compliance with environmental, health and safety laws with Subsection 97(5) in particular obligating any entity transporting petroleum by road to institute measures to ensure safety.

1.2 Other Functions of EPRA



1.3 Scope of the Handbook

Nairobi Region: -Road network in Nairobi, Kajiado, Machakos, Kitui, Makueni and Garissa Counties.

Langata Interchange -Southern Bypass-Kikuyu interchange-Soko Mjinga	Kibwezi – Kitui- Kanyonyo	Tala-Kangundo Road-Outering Road Interchange (Umoja)
Langata Interchange – Oleser-en-Machakos town	Kanyonyo-Mwingi-Garissa	Dolhom-Jogoo Road-Lusaka Road-Enterprise Road-Lungalunga Road
Machakos – Kitengela-Namanga border point	Kanyonyo junction–Thika superhighway interchange	Donholm (Outering Road)-Allsoaps
Isinya-Kiserian-Rongai-Langata Interchange	Thika-Nairobi Museum Hill	Muthaiga-Kiambu Road-Limuru town.
Machakos-Emali	Nairobi Museum Hill –Zambezi	Limuru town-Limuru road-Ndenderu (Northern Bypass)
Emali-Loitoktok	Nothern Bypass(Gitaru)- Ruiru -Easterna Bypass (Cabanas)	Ngong road (NHIF)-Karen Shopping Centre-Galleria Interchange (Bomas of Kenya)
Emali-Mtito Andei	Machakos town - Tala	

Central Region: Roads in Nyeri, Murang'a, Embu, Tharaka Nithi, Laikipia and Kirinyaga Counties.

Thika – Kenol-Makutano (Mwea)	Somson corner-Kutus-Kagio-Sagana	Nyahururu town-Rumuruti town
Makutano-Mwea-Embu town	Makutano-Sagana-Karatina	Makutano (Laikipia)-Mweiga-Nyeri town
Embu town-Kiritiri	Karatina-Kaguma-Kerugoya-Kutus	Nyeri town-Marua
Kiritiri-Siakago	Kutus-Kimunya	Gatitu junction-Mukurwe-ini
Siakago-ENA	Kabare – Kerugoya	Mukurwe-ini-Othaya-Giakanja-Nyeri (Express inn)
ENA-Kathwana (Marimanti Junction)	Karatina-Marua	Karatina-Mukangu- Sagana
Kathwana -Mitunguu	Marua-Kiganjo-Naromoru-Nanyuki	Sagana-Kabuta-Murang'a
Mitunguu-Nkubu	Naromoru-Solio Ranch-Lamuria-Makutano (Laikipia)	Murang'a-Kayahue-Kahuro-Githambo
Nkubu-Chogoria-Chuka-Nithi-Runyenjes-Embu town	Makutano (Laikipia)-Ndara-gua-Wiyumiririe-Nyahururu town	Githambo-Delview-Thika

2.0 General Characteristics of Risks Associated with Road Traffic Accidents

The number of petroleum and LPG related incidents reported on Kenyan roads has been increasing which calls for concerted efforts by all stakeholders to mitigate the adverse impact.

Year	No. of Petroleum/LPG Accidents
2022	47
2023	51
2024	53

Source: EPRA

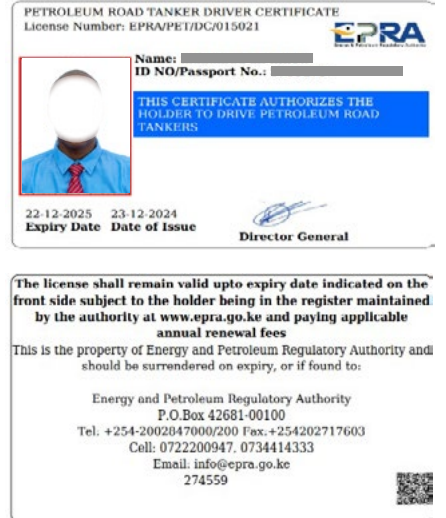
Investigation by EPRA into the above incidents have established, among others, the following risk factors:

- i) Lack of a designated carriageway (lane) for petroleum tankers and other hazardous goods vehicles. This results in mix of petroleum transport vehicles with other traffic leading to increased risk.
- ii) Human factors such as excess and inappropriate speed, impairment by alcohol, lane indiscipline, distracted driving, improper crossing, walking on the road, improper overtaking, turning without due care, freewheeling, brake failure among others.
- iii) Design of roads and road networks is an important factor. Exposure to risk is increased significantly by road networks failing to route heavy traffic around populated areas or to separate pedestrians from motorized traffic.
- iv) Excess or inappropriate speeds.
- v) Pedestrians, cyclists, and motorized two-wheeler (boda boda) crossing.
- vi) Poor visibility particularly for non-motorized transport (NMT), bodaboda riders and inadequate use of reflective tapes. With effective use of running lights fitted on motorized two-wheelers, reflective jackets for riders and reflective tapes for tankers, crashes associated with poor visibility can be avoided.
- vii) Non-use of seatbelts and child restraints for vehicles as well as non-use of bicycle/ crash helmets where cyclists or motorized two-wheelers are involved.
- viii) Crash analysis by NTSA shows that the majority of pedestrian fatalities involve impact with unprotected car fronts. Roadside design and the positioning of roadside objects play key roles in determining crash injury, as well as influencing the behaviour of road users; and
- ix) Inadequate post-crash care due to inadequate Emergency Response Plans (ERP).

3.0 Driver's Section

3.1 Legal Requirements

Subsection 74(1)(d) of the Petroleum Act provides that “Any person who wishes to drive a vehicle, or engage a driver, for the purpose of transporting petroleum in bulk by tanker shall ensure that such driver is certified for that purpose by the Authority”. To ensure compliance subsection 74(3) (c) states that “A person who contravenes this section commits an offence and shall on conviction, be liable to a fine of not less than two hundred and fifty thousand shillings, or to imprisonment for a term of not less than three years, or to both such fine and imprisonment.” The drivers may on request be asked, by police or EPRA officer, to produce their licence when operating at any time.

	To obtain the Petroleum Road Tanker Driver Certificate the following requirements must be provided: • Scanned original copy of Identification documents (ID or Passport) for the driver. • Valid Certification of Fitness for Drivers from Designated Health Practitioner (DOSHS approved Doctor). • A valid driving licence for the class of vehicle being driven issued by NTSA. • Certificate of Good Conduct. • Passport size photo of the driver. • Proof of training on defensive driving from a National Industrial Training Authority (NITA) approved driving school.
--	---

3.2 Professional Code of Conduct- “DOs” and “DON'Ts”

Petroleum tanker drivers have a responsibility to maintain fitness for duty and not accept unsafe practices or breaches of the law including the following:

i. Recognize and accept obligations as a professional driver.

DO	Conduct self in a polite and considerate manner at all times as an ambassador for the Oil and Gas industry and the transporting company.
DO	Implement regular pre-loading vehicle inspection in accordance with a checklist approved by EPRA or its agents.
DO	Transport petroleum only for petroleum business licensees in possession of valid licences issued by EPRA or petroleum imported through an import route designated or prescribed.
DO	Load petroleum only from petroleum storage facilities in possession of a valid licence issued by EPRA.
DO	Discharge petroleum only to a facility in respect of which a licence has been issued under the Petroleum Act, to an end user for own consumption or, in the case of petroleum intended for export, at a destination outside Kenya.
DO	Drive with consideration for all road users including pedestrians.
DO	Support safety within the workplace.
DO	Comply with the emergency preparedness and response plan that has been put in place by the petroleum transport business licensee.
DO	Actively support the code of conduct and promote it to other drivers.
DO	Encourage safety on the road. 

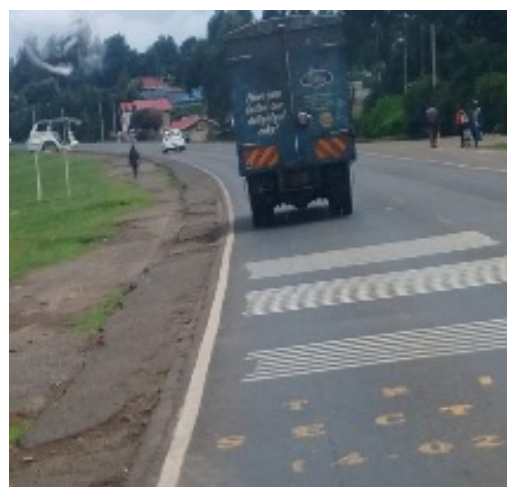
DO	Build capacity and maintain professional knowledge through regular Defensive Driver training refresher courses.
DON'T	Drive or allow another person to drive a petroleum tanker in his custody unless such tanker has a valid petroleum road tanker permit issued by EPRA.
DON'T	DO NOT tamper with the quality of the petroleum in his custody.
DON'T	DO NOT divert petroleum destined for export into the local market.

ii. Comply with all Road Traffic laws, and be considerate to others by:

DO	At all times, be professional and operate the petroleum road tanker in accordance with the requirements of the Petroleum Act, and other applicable laws.
DO	Allow EPRA officers or its agents access to the vehicle for inspection for the purpose of ascertaining compliance with the Petroleum Act.
DO	Have driver certificate, or a certified copy thereof at all times when driving or in any way, controlling a petroleum road tanker.
DO	Comply with arrangements for the safe parking of petroleum road tankers in accordance with the emergency preparedness and response plan.
DO	Only park at designated areas where they exist or at least 100 metres away from any building where a designated parking does not exist.
DO	Ensure fitness for duty – alert, healthy and prepared for the driving task.



- DO - Observe speed limits and seat belt laws.
- DO - Observe working time regulations and 'Rules on Driver's Hours.
- DO - Observe drug and alcohol laws.
- DO - Leave a safe distance between other vehicles.
- DO - Travel in left lanes unless overtaking.



DO	Adopt a considerate driving style, reducing noise when operating in a built up area.
DO	Obey all other laws and operate to 'The Highway Code'.
DON'T	DO NOT transfer own driver certificate to any other entity without written consent of EPRA.



DON'T

DO NOT park petroleum road tanker within one hundred metres (100m) from any building when tanker is loaded or empty.

- iii. Support 'Safe Systems of Work' that include practices and procedures to reduce the risk of injury or death on the roads.
- iv. Take pride in the vehicle and conduct regular checks to ensure the vehicle and the consignment on board remains in a safe condition.
- v. Give high priority to emergency vehicles and presidential motorcade.

A fire engine, ambulance or police vehicle sounding its special warning device or operating its flashing beacons takes precedence over all other traffic.



DO

Move out of its course and stop if necessary.

DO

Remain stationary until it has passed.

If you hear the siren or see flashing lights of the presidential motorcade approaching:

DO

Draw your vehicle to a halt at the extreme left or any other safe position of the road.

DO

Remain stationary and only proceed when instructed to do so by means of the hand signal of a policeman or when the presidential motorcade has passed.

DON'T

DO NOT try to overtake or join the motorcade.

- vi. Proceed with caution and be ready to give way to any other special vehicles.



vii. Acknowledge that driver distraction is a risk and undertake to reduce this:

	DO - Fully prepare for any journey to avoid being distracted when driving. DON'T - Avoid using mobile phones or other forms of communication when driving.
---	--

viii. Actively support the code of conduct for the purpose of promoting compliance with laws and promoting safe behavior, within the workplace and on the road.

ix. Undertake to actively participate through Health and Safety representatives and managers to commit to industry codes of conduct, codes of practice and safety guidelines in this handbook.

x. Guidelines for animals. When you see animals on the road:



DO - Reduce the speed of your vehicle and slowly pass them. Allow them plenty of room and be ready to stop if necessary.

DO NOT frighten the animals by sounding the horn or revving your engine.

NOTE:

- Animal drawn carts should be fitted with REFLECTIVE material.
- When crossing the road with livestock, the shepherd is required to use a RED FLAG to communicate with other road users.

Avoid Road Rage and other forms of aggression.

 Be courteous on the road. Cooperate with others.	 DO NOT retaliate if another driver/person provokes you.
---	--

3.3 Cabin Safety

Petroleum road tanker drivers are required to wear a seatbelt AT ALL TIMES while operating the vehicle, in order to minimise the risk of injury in the event of a collision or rollover. Failure to do so significantly increases the likelihood of being ejected from the vehicle or being violently thrown within the cab during an impact.

Seatbelts are designed to absorb and distribute the forces generated during a crash, thereby reducing the risk of contact with interior vehicle components and preventing ejection. The recommended seatbelt types for commercial vehicles such as tankers are three-point lap and diagonal seatbelts or, where appropriate, two-point lap seatbelts. The use of single diagonal belts or full harness-type belts is not recommended for this class of vehicle.

Compliance with seatbelt requirements is a critical element of safe driving practices and contributes directly to the reduction of injuries and fatalities on the road.



DO	Wear your seatbelt at all times no matter how short the distance being travelled.
DO	Fasten your safety belt correctly.
DO	Secure all loose items in the cab to prevent being injured in the event of a collision or a crash.
DON'T	DO NOT allow children and any unauthorized persons in cabs.
DON'T	DO NOT place objects in main field view of windscreen.

3.4 Driver Behaviour

3.4.1 Journey Planning

Regulation 3(n) of LN 99 of 2019 obligates the driver to have in his possession a journey plan for each trip signed by the owner of the tanker or an authorized representative and specifying the following:

- i) Registration number of the tanker;
- ii) Date and time of travel;
- iii) Cargo on board;
- iv) Name and identification card number of the driver;
- v) Name of the authorizing officer;
- vi) Route of travel, designated stopping and resting points; and
- vii) Maximum allowed continuous driving time which in any case shall not exceed eight (8) hours in any twenty-four (24) hour period and that the driver shall after every four (4) hours of continuous driving, take a rest for a minimum of half an hour.

	DO- Use and adhere to a planned system of driving.	
	DO - Adhere to the Regulated Driving Hours. Driving hours are limited in order to keep the driver and other motorists safe on the road. Tiredness and fatigue can reduce reaction time and impair driver's judgement.	
	Continuous Driving: 4 hours	Daily Driving: Maximum of 8 hours in any 24-hour day
Breaks from driving: 30 minutes after every 4 hours continuous driving.		
DO - Be sure of good visibility. Where view is restricted, use alternate sources of information making the most of any glimpses of 'wider views' that you can get.		
DO - On the approach to a hazard where the view is restricted, use every opportunity to get more information about the road ahead.		
Consider the curvature of a row of trees or lamp posts		
Look for reflections in shop windows		
Check the angle of approaching headlights		
Check the angle of shadows cast by headlights and other lights		
Look for open spaces and breaks in hedges, fences and walls in the approach to a blind junction.		

3.4.2 Act Appropriately

Position



Look, Assess, Decide by use of the mirrors;

DO - Observe all around you, using your mirrors to assess the situation behind; and After giving a signal, take up the correct position on the road. Check your mirrors again before changing course.

DO - Look into the mirror and glance behind BEFORE opening the door of a vehicle.

DO - Get out on the side nearer the kerb whenever you can.



Give Information

DO Mirror, Signal. Give a signal to other road users. Use indicators, but consider arm signals, horn and lights.

DON'T Flash lights to convey any other message or to intimidate other road users.



Speed. Watch Your Speed.

- Any indicated speed limits are maximum speeds allowed by law, and are not necessarily safe speeds at all times.
- DO NOT exceed any speed limit indicated. High speeds increase the chances of skids, roll-overs and serious injury.
- DO- Adjust your speed to the correct level for the hazard by using the brakes or engine braking system



DO- Always drive within the speed limits on public highways as per Traffic Regulations and take care in villages and built up areas. Adhere to site specific rules when at the depot or on customer sites.

DO - Leave room for lighter vehicles to overtake without having to pass more than one heavy goods vehicle at once.

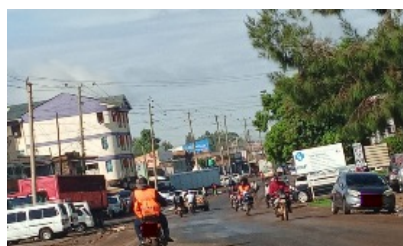
DON'T- DO NOT intimidate other road users by driving too close or at excessive speed. Avoid Aggressive Driving.

DON'T - DO NOT run in convoy.

DON'T - DO NOT Tailgate.



Gear



DO - Once travelling at the right speed, select the correct gear to negotiate and accelerate away from the hazard.

DO - Select a lower gear before you reach a long downhill slope. This will help to control your speed.

Overtaking



DO - Overtake only when it is safe and legal to do so.

DO - Be prepared to give the driver behind you the opportunity to overtake.

DO - Give way to oncoming vehicles before passing parked vehicles or other obstructions on your side of the road.

DO - Stay in your lane if traffic is moving slowly in queues.

DO - Allow plenty of room. Move back to the left as soon as you can but do not cut in.

DON'T - DO NOT follow a vehicle ahead which is overtaking.

DON'T - DO NOT accelerate while you are being overtaken, for you will cause the other driver to misjudge distances, mistime his operation and expose both of you to serious danger.

DON'T - If the vehicle you are overtaking accelerates, DO NOT race it.

DON'T - DO NOT overtake where there is a continuous yellow line.

DON'T - DO NOT overtake in the face of oncoming traffic.

Drive Safely

DO - Self-commitment to less injuries and fatalities on our roads, less accident damage to vehicles, less unproductive downtime for vehicle repair, and reduced insurance premiums.

Night Driving



DO - Keep your windscreen and headlamp glasses clean.

DO - Ensure all lights are working and headlights are properly adjusted.

DO - In daytime, use the lights whenever visibility is seriously reduced by fog, heavy rain, smoke or any similar condition.

DO - Dip lights when following another vehicle. Even if the lights are dipped, do not drive so close behind another vehicle that they blind the driver in front.

DO - Drive at a low speed so as to be able to stop well within the distance illuminated by your lights in case of pedestrians, cyclist or un-lit vehicles.

DO - Keep clear. A single headlight may be a rider but it could also be a motor vehicle with one light out of order.

DON'T - DO NOT blind others. Dim your headlights before they shine into the eyes of the oncoming road users.

DON'T - DO NOT wear tinted glasses unless they have been prescribed for night wearing.

DON'T - Extraneous lights may blind other drivers. Avoid using flashy decorations.

DON'T - If blinded by the lights of other vehicles, DO NOT retaliate by blinding them as well. Do not drive in front of them, instead slow down and move to the side if possible. Stop if necessary.

Efficient Fuel Usage

DO - Target efficient fuel usage for lower costs, improved profit margins, reduced emissions and improved environmental performance.

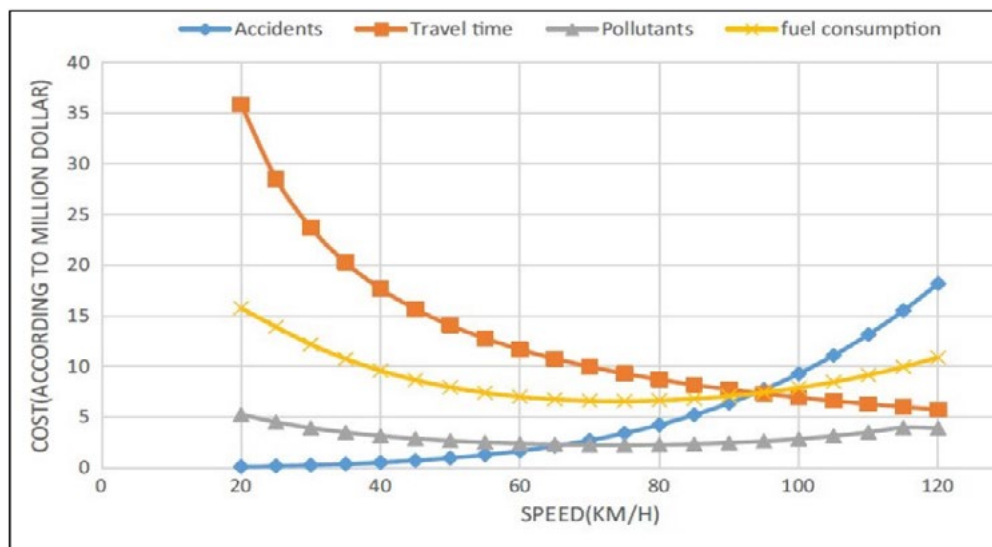


Figure 1: Relationship between vehicle speed and other economic objectives, Source: Hosseinlou et al., 2015

Reference: Turner, B., Job, S. and Mitra, S. (2021)

Reduce Noise

DO - Drive in a manner which minimizes noise from engines, bodies and suspensions, particularly in villages and built up areas and especially in the early morning and late at night.

Lane Discipline



DO - Always keep to the left-hand lane unless overtaking slower vehicles.

DO - Remember to use the mirror, signal and maneuver routine before changing lanes.

DO - Remember when driving on the motorway, watch out for any vehicle in the right hand lane moving back into the left, as most vehicles will be travelling faster than you.

DO - Watch out for dead end at end while on the climbing lane.

Look after yourself and others.



DO - ALWAYS carry out one/two minute mental and visual risk assessment, upon arrival at site.

DO - In traffic queues, leave the pedestrian crossing clear.

DO - Watch for Persons with Disabilities (PWD), children and the elderly, they may not judge speeds very well and may step into the road when you least expect it.

DON'T – DO NOT signal pedestrians to cross, another vehicle may be approaching without your notice.

DON'T - At Road junctions DO NOT create traffic congestion and obstruction; make sure that by entering the junction, your presence will not block the junction.

DO - as a driver, imagine a safety zone around your vehicle which you can control – this is your MYSPACE. Then consider the DOs below:

M	Mind where you park.	DO	What do I do inside MY SPACE?
Y	You are in charge	DO	What or who can intrude into MY SPACE?
S	See and be seen.	DO	How can I get hurt?
P	Protect others.	DO	What do I do about it?
A	Access all around.	DO	What happens when I leave MY SPACE?
C	Clean your environment.	DO	How can I control low risk areas?
E	Escape route.	DO	Consider how you as an individual can manage the risk, and if the risk is too high and it is unsafe for you to deliver, inform your immediate supervisor / contact and await further instruction.

DO - Report any issues via your Near Miss/Hazard reporting.

DON'T – DO NOT use the extreme right-hand lane on a three-lane or four-lane motorway.

DON'T – DO NOT ever put yourself or anyone around you at risk.

Traffic Light Signals

Signaling by itself does not necessarily entitle you to carry out your intention; you must be sure that it is safe to do so.

RED means STOP; RED and AMBER also mean STOP. They alert the driver to get ready

GREEN means you may go on if the road is clear and AMBER means STOP at the line.

DO - Watch out for other drivers' and police officers' signals and take necessary action promptly.

DO - Obey signals given by police officers and traffic marshalls directing traffic.



Reversing

DO - Be especially careful about the "blind area" behind you, it is the part of the road which you cannot see from the driving seat.

DO - Reverse from major road to minor road with hazard lights on.

DO - If your view to the rear is restricted, get help from a responsible person.

DON'T - Never reverse from a side road into the main road.

DON'T – DO NOT drive your vehicle in reverse more than necessary.

Stopping

DO - Reduce your speed to suit the weather, visibility, the road, the traffic conditions and your ability to control the vehicle.

DO - Drive at a low speed so that you may be able to stop the vehicle within the distance you can see clear, particularly with consideration to the weather and the state of the road.

DO - When stopping pull-in close to the near-side of the road.

DO - When you stop, you must switch off the engine and set the hand/foot brake before you leave the vehicle.

DON'T - Sudden stopping causes accidents.

DON'T - When stopping in an emergency DO NOT lock the wheels.

3.4.3 Exercise Defensive Driving Skills at All Times

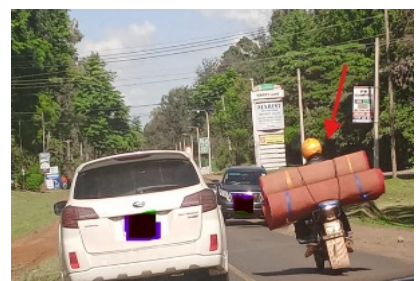
Defensive Driving (DD) is the application of a comprehensive approach that combines Knowledge, Attitude, Skills, and Techniques (KAST) to ensure safe and responsible driving. For driving to be both EFFECTIVE and SAFE, all four elements must be present and consistently applied in practice.

Defensive Driving encompasses a core set of principles which, when reinforced by the appropriate mindset and level of competence, serve to guide a driver's decisions and actions on the road. A defensive driver is one who has been trained to:

- Anticipate and respond appropriately to potential hazards;
- Maintain full concentration and situational awareness at all times;
- Exercise sound judgement and make proactive, safety-conscious decisions;
- Respect other road users and observe all applicable traffic laws and regulations;
- Continuously assess and adjust driving behaviour based on road, traffic, and environmental conditions.

Mastery of these principles enhances road safety and plays a key role in the prevention of road traffic accidents, particularly in high-risk sectors such as petroleum transportation.

A defensive driver should:



DO - Control the vehicle with precision.

DO - Remain alert at all times when driving.



DO - Be aware of other road users, especially cyclists that may be filtering through the traffic.

DO - Drive with concentration and awareness.

DO - Anticipate the actions of others.

DO - Act appropriately at all times.



DO - Leave a comfortable safety margin all around the vehicle – especially to the front.

DO - Anticipate and Plan for Bad Weather Conditions (Wet road surfaces can cause tyres to hydroplane (skim on a thin layer of water) and lose traction):

DO	Make sure the screen wash contains sufficient water and winter additive.
DO	Check that all the lights are in full working order and clean.
DO	Ensure the wind screen and windows are all clear INSIDE and OUT.
DO	Always be prepared in case you get stuck. Carry a working torch.
DO	Carry a spade or shovel.
DO	Keep warm clothing.
DO	In severe weather always check with your supervisor before attending to the vehicle and prior to making any delivery.
DO	Keep Your Distance. Remember braking distances can be 10 times longer in bad weather.
DO	Drink plenty of fluids on a long journey.
DO	Adapt your driving to changing road conditions (mist, low sunlight, temperature, etc.).
DO	Reduce speed if the sun is directly in front of you reducing your vision.
DO	Wear sunglasses to reduce glare.
DO	Be aware of increased agricultural traffic.
DO	On open roads, ensure you have plenty of fresh air by opening a window.
DON'T	DO NOT forget that excess heat can induce drowsiness.

3.4.4 Avoid Drugs and Alcohol

DO – Be aware that prescribed or over the counter medicines may affect ability to drive. As an employee, the driver needs to inform his manager or supervisor.

DO - Undertake a drug test whenever required.

DON'T - DO NOT drink and drive.

DON'T - DO NOT drive if you are unwell.

DON'T - DO NOT take medicine which causes drowsiness if you intend to use the road.

DON'T - DO NOT Drink alcohol or be under the influence of alcohol.

DON'T - DO NOT consume substance of any kind (including legal highs or prescription drugs) that may impair ability to drive either on site, in company vehicles or before coming onto site.

DON'T - DO NOT offer drugs or medication to colleagues.

Blood Alcohol Concentration (BAC) can be measured accurately by a Police Breathalyzer (alco-blow). It is an offence to refuse, or fail to comply with a direction of a police officer in relation to an alcohol test.

NOTE: You could be charged with a crime if the test shows you have taken drugs. These include miraa, muguka, cocaine, heroin, marijuana, kuber, panadol (painkillers), energy drinks among others.



Some of the side effects of alcohol in driving are:

- Alcohol slows down brain functions. This affects the driver's ability to respond, make decisions or react quickly;
- Reduces driver's judgement of speed or distance from other cars, people or objects;
- Gives the driver false confidence – you may take greater risks because you think your driving is better than it really is;
- Makes it harder for the driver to concentrate and pay attention to various details in traffic; and
- Affects driver's sense of balance.

3.4.5 Smoking

Smoking is strictly prohibited in enclosed public spaces. This prohibition extends to all commercial workplaces, including the cabins of petroleum road tankers. Compliance is essential to ensure the safety of drivers, passengers, and the general public, particularly given the flammable nature of petroleum products.

	DO - Try to give up smoking.
	DO- Smoke in authorized zones only where provided
	DO - Put the residues into a proper container once you have finished.
	DO - Ensure that the cab has a NO smoking sticker displayed
	DON'T - DO NOT smoke in work places.
	DON'T - DO NOT smoke in vehicle cabins or around the vehicle.
	DON'T - DO NOT smoke next to fuels, flammable gases or vehicles unloading such materials.

3.4.6 Fitness to Drive

Drivers must be physically fit to operate a vehicle safely. Specifically, they must be able to read a standard vehicle number plate in good daylight from a distance of 20 metres. In addition, possession of a valid medical fitness certificate, obtained through an annual medical examination, is a mandatory requirement for the issuance of a Driver Certificate by the EPRA.

DO	Schedule set times for food and schedule in a daily physical exercise plan..
DO	Opt for healthier food diet with healthy options such as fruit, nuts or proteins
DO	Consume plenty of water and ensure it is always available in your cab.
DO	Regularly wash your hands, especially before eating.
DO	Get plenty of rest of at least 6 hours daily.
DO	Replace lost vitamins, eat fruit and vegetables.
DO	Keep your mind active. Listen to audio books, learn a new language or try different music genres in order to stimulate your mind and alleviate boredom.
DO	Stay connected with home by catching up with family on your breaks or sharing experiences with family.
DON'T	DO NOT eat or drink whilst driving.

3.4.7 Use of Electronics and other Communication Devices

Mobile Phones

The use of mobile phones while driving is illegal and further discouraged even when using hands-free or Bluetooth devices. Research has shown that mobile phone use significantly increases the risk of road traffic accidents by impairing concentration and reaction times. Drivers must refrain from using any mobile communication devices while the vehicle is in motion.

DON'T	Never make phone calls while you are driving, UNLESS you see an accident about to happen..
DON'T	DO NOT use phones on customer sites unless the vehicle is stationary.
DON'T	DO NOT use mobile phones or two way radios in loading areas.

Satellite Navigation Systems

DO	Program these before the start of the journey.
DO	Position them out of reach as they should not be physically adjusted during the journey.
DON'T	DO NOT mute them as this might encourage you to take your eyes off the road ahead.
DON'T	DO NOT allow the device to obscure your main line of sight.

Other Electronic Devices (iPod or equivalent)

DO	Set up any entertainment system e.g. a cd or iPod to the vehicles radio system before you begin your journey.
DO	Position them out of reach as they should not be adjusted during the journey.
DON'T	DO NOT use ear pieces under any circumstances.
DON'T	DO NOT allow the device to obscure your main line of sight.

3.4.8 Personal Protective Equipment for Drivers

Helmet, less than 5 years old.
Sealed goggles for loading/unloading of product.
Hearing protection may be required on a site specific basis.
Safety glasses are compulsory for loading and discharge of product.
Safety harness advisable when working at height.
Long sleeved High Visibility jacket.
Safety gloves.
High visibility trousers.
Safety boots are compulsory. Boots must be laced up (preferably with 150mm of heel support). Other means of protection are determined by risk assessment.

Access and Egress – Vehicle Cabs



- DO- Maintain three points of contact on steps, grab handles and stairways.
- DO - Keep safety footwear clean at all times.
- DO - Exit your vehicle backwards using three points of contact.
- DO - Ensure the ground onto which you are exiting is safe and clear of debris.
- DON'T - Jump from the vehicle.
- DON'T - Carry objects such as mobile phones or other hand-held devices.
- DON'T - Obstruct vehicle steps.

3.4.10 Vehicle Stability on the Highway



- DO - Adjust vehicle speed to suit road conditions, prevailing weather conditions and the environment.
- DO - Check your axles are all level.
- DO - Check axle weights are compliant before leaving the loading depot.
- DO - Ensure articulated vehicles and trailers are in line.
- DO - Avoid freewheeling.
- DO - Always drive with both hands on the wheel where possible. This will help you to remain in full control of the vehicle at all times.
- DON'T – DO NOT drive too fast going through bends.
- DON'T – DO NOT drive too fast on roundabouts or corners.
- DON'T – DO NOT hit or ride up kerbs.
- DON'T – DO NOT make sudden or harsh steering inputs.
- DON'T – DO NOT brake suddenly or harshly.
- DON'T – DO NOT drive too close to open trenches and open excavations.

Avoid rollover by always adhering to the following “3-Ss”:

S-Safe Speed	Always adopt a cautious speed, and go slow when approaching, entering, driving through or exiting a bend, roundabout or corner. Any slight increase in speed around a corner increase the chance of an overturn by a significant margin.
S-Safe Load	The vehicle load must be within the calibration chart limits.
S-Seatbelt	Always wear your seatbelt, just in case you are involved in an overturn incident – it could save your life.

3.5 Fatigue Management

Fatigue impairs a driver's ability to make sound decisions, react appropriately, and maintain concentration. It is a significant risk factor in road traffic accidents and may arise from a variety of causes, including but not limited to:

Fatigue decreases Driver's ability to make the right decisions and may be caused by any of the following:

• Insufficient sleep or rest	• Sleep disorders and underlying medical conditions
• An extended length of driving time	• Driving at the time of day when you are usually resting or sleeping e.g. night driving, early morning driving
• Poor diet or dehydration	• The use of certain medications
• Monotonous driving conditions or long, unvaried routes	• Hot and humid weather conditions

Drivers must remain alert to the signs of fatigue and take proactive measures to mitigate its impact and ensure safe vehicle operation.

To avoid Driver fatigue:

DO	Get quality sleep before driving.
DO	Begin driving only when you are properly rested and stop when you are tired.
DO	Take regular breaks when driving over long distances.
DO	Eat balanced meals at regular intervals.
DO	Keep fit and healthy.
DO	Avoid driving at night. This is when you are likely to feel sleepy.
DO	Stop at a safe place and rest if you feel tired.
DON'T	Drive if you feel tired, sleepy, mentally stressed on prescription drugs.

3.6 Pre-Journey Inspection

It is the responsibility of the driver to ensure that the vehicle is in a roadworthy condition and fit for purpose before undertaking any journey. A comprehensive pre-journey inspection must be carried out prior to commencing any trip.

This inspection should cover all critical vehicle systems and components, including tyres, brakes, lights, mirrors, steering, fuel systems, and safety equipment. A formal record of each inspection must be completed and retained as part of organisational procedures.

Any defects or faults identified during the inspection, particularly those that may compromise safety, must be reported immediately to the designated supervisor. No journey should proceed until such issues have been appropriately assessed and resolved.

Regular and thorough pre-journey inspections are a key component of safe operating practices and play a vital role in preventing incidents on the road.

DO	Ensure the vehicle is fitted with blind spot mirrors.
DO	Ensure the vehicle is mechanically sound and has enough fuel.
DO	Ensure the vehicle is properly insured.
DO	Ensure the vehicle has a valid vehicle inspection certificate.
DO	Check that you have a valid driving licence.
DO	Check that rear facing signs for cyclists are present and clean.
DO - Ensure that the vehicle has the following:	
• Fire extinguisher in good condition • Tow rope • A complete first aid kit • Spare tyre with required pressure • Two safety warning triangles (Life savers) • A jack • Jump start cable • Wheel spanner	
DO	Check that that reversing hazard lights are functioning before starting any journey.
DO	Check that the reversing alarm is functioning before starting any journey.
DO	Ensure the vehicle is fitted with rear CCTV.
DO	Ensure the vehicle is equipped with a hazard sign.
DO	Ensure the flashing beacons (warning lights) and rear strobe lights, if fitted, are visible.
DO	Ensure the vehicle has two wheel chocks of sufficient strength and made from non-sparking material. The wheel chocks shall be set when loading and when the tanker is parked.
DO	Have a spill kit suitable to contain and clean small spills (up to 50 litres) of the substance/s being transported.

Move off only when it is safe to do so. Before moving ensure the following:



- DO - Ensure side mirrors are adjusted properly.
- DO - Use all mirrors to check the road is clear.
- DO - Look around/check for blind spots (areas you are unable to see in the mirrors).
- DO - Signal if necessary before moving off.
- DO - Look round for a final check.

3.7 Safe Actions During Vehicle Breakdowns

In the event of a vehicle breakdown, it is essential to take prompt and appropriate action to ensure the safety of the driver, and other road users. The following safety measures are recommended:

DO	Get the vehicle safely off the road if possible.
DO	Exit vehicle cab on the non-traffic side.
DO	Warn other traffic by using hazard warning lights if the vehicle is causing an obstruction.
DO	Stay in a safe location away from the vehicle if it is safe to do so.
DO	Help other road users see you by ensuring you, and any passengers, wear high visibility reflective clothing/work wear.



DO - Put a warning triangle on the road at least 60 metres in front and behind your broken-down vehicle on the same side of the road, or use other permitted warning devices if you have them, if it is safe to do so. Always take great care when placing or retrieving them.

DO - Keep your sidelights on if it is dark or visibility is poor, if it is possible to do so.

DO - Report to the police and the transporter to arrange for recovery.

DON'T - DO NOT attempt to use a warning triangle on a motorway, superhighway or other high speed road.

DON'T - DO NOT put yourself or your passengers in danger.

DON'T - DO NOT stand (or let anybody else stand) between your vehicle and oncoming traffic.

DON'T - DO NOT stand where you will prevent other road users seeing your lights at night or in poor visibility.

3.8 Safe Actions During Vehicle Maintenance

No maintenance or emergency repair work shall be undertaken on a vehicle without prior formal authorisation from the designated supervisor. This requirement ensures proper coordination, adherence to safety protocols, and accountability.

Before any maintenance activity is carried out, the following precautions must be observed:

DO	Always keep unauthorized personnel at a safe distance.
DO	Ensure the vehicle is parked in an appropriate safe area.
DO	Ensure safe systems of work and vehicle isolation are in place, keys removed from ignition whilst maintenance crew are working on the vehicle, wheel chocks in place etc
DO	Ensure maintenance crew have the technical knowledge of petroleum safety.
DO	Keep track of the vehicle maintenance records.
DON'T	Undertake maintenance of vehicles by the road side or on loading/unloading sites.

3.9 Safe Loading and Unloading

The driver is responsible for ensuring that:

- Loading and offloading of the vehicle is only done at approved locations;
- Ensure the engine of the vehicle is switched off, except where the engine is required to drive pumps or hydraulic units for the purposes of loading or offloading;
- Ensure the battery isolator for the petroleum tanker is turned to the "OFF" position; and
- Ensure sound electrical bonding in precaution against ignition by static charges when handling petroleum products.

Loading



DO - Be aware of product type and properties.

DO - Adhere to any specific loading instructions displayed at any sites.

DO - Ensure that loads are distributed safely and within weight limits as per the calibration chart.

DO - Ensure that the vehicle body is clean prior loading to prevent contamination.

DO - Always remain in the cab or as per the ERP for the site..

DO - Ensure each truck tank compartment is loaded with product with same flash point as per previous consignment to prevent switch-loading hazards. Accumulation of static electricity is accelerated in a switch-loading operation increasing the likelihood of static electricity discharge, capable of igniting the vapours.

DON'T – DO NOT transport petroleum in containers with combined volume exceeding one thousand litres without EPRA licence.

DON'T – DO NOT allow the truck to be loaded with un-prescribed products.

Unloading

DO	Follow the MYSPACE principle before, during and after the delivery.
DO	Ensure that all ancillary equipment to be used is clean and serviceable.
DO	Always remain in the immediate vicinity of the vehicle's controls whilst discharging.

Site Risk Assessment

It is the Driver's responsibility to assess site conditions prior to permitting loading or discharging the consignment. Drivers are responsible for identifying hazards and reporting to the relevant site managers/staff any issues that could lead to injury either to themselves or other employees at the site.

4.0 Vehicles Section

4.1 Regulatory Requirements

Subsection 74(1)(c) of the Petroleum Act provides that “Any person who wishes to use a vehicle for the purpose of transporting petroleum in bulk shall have a valid petroleum permit in respect of that vehicle issued by the Authority”. To ensure compliance subsection 74(3) (b) states that “A person who contravenes this section commits an offence and shall on conviction, be liable to a fine of one million shillings, or to imprisonment for a term of not less than three years, or to both such fine and imprisonment.” The Transporter may on request be asked to produce their licence when operating at any time by EPRA officer.

Licence No. EPRA/PET/7554 THE PETROLEUM ACT, 2019 PETROLEUM BUSINESS LICENCE (EXCEPT LPG) Licence is hereby granted to _____ of P.O. Box _____ to carry out the following Petroleum businesses:- TRANSPORT OF PETROLEUM PRODUCTS(EXCEPT LPG) BY ROAD VIA (SEE PAGE 2) On Premises situated at: Plot No. _____ Building _____ Street/Market _____ Town/District _____ This Licence expires on _____  Renewal Date _____ Signature _____ <i>Director General</i> Energy And Petroleum Regulatory Authority	• To obtain the Transport of Petroleum Products (except LPG) licence the following requirements must be provided: • CR12 from the Registrar of companies (should not be older than 1 year at the time of submission of the application. Further, if a Limited company appears as part of the shareholders, provide the company's CR12 plus all the Directors' IDs) • Certificate of Incorporation / Business Registration Certificate • Valid Tax Compliance Certificate from Kenya Revenue Authority • Legible Copies of Identification Documents i.e. IDs/Passports for all the Company directors. • Single Business Permit to operate business from the respective County Government. • A valid Motor Vehicle Inspection Certificate for each prime mover and trailer. • Log book for each prime mover and trailer (Attach a valid lease agreement if vehicle not in the name of the applicant). • A list of vehicles; paired prime movers and trailers where necessary (In Microsoft Excel). • A valid calibration certificate for the tank mounted on each trailer. • Fire Clearance Certificate for the vehicle(s) from the respective County Fire Department. • Valid Work Permits Class “G” or “D” for all foreign directors working in Kenya (Foreign directors not resident in Kenya should provide a notarized declaration. Any employee given Powers of Attorney by a foreign director should provide a copy of their ID). • A summary Highway Emergency Response Plan from the applicant.
--	--

4.2 Reflective Tapes and GPS Tracking Device

Regulation 2(b)(o) of LN 99 of 2019 requires that petroleum tankers have the following:

- A line of reflective tape along the entire horizontal length of the left and right side of the tank;
- A horizontal line of reflective tape at the back of the tank covering the entire diameter;
- A line of reflective tape along the entire circumference at the back of the tank;
- A line of reflective tape along the entire horizontal length of the left and right side of the cabin;
- A line of reflective tape along the entire horizontal length of the front of the cabin;
- A properly functioning vehicle tracking device with Global Positioning System (GPS) capability with distance, locations and speed reports available on a web-based database, accessible to the Authority for periodic monitoring.



The tracking system shall store information related to movement of the tanker in a permanent, replayable and printable form. The vehicle will have Motor Vehicle Inspection Certificate for the prime mover and trailer showing the degree of compliance to the specifications spelt out by the applicable Kenya standard.

4.3 Vehicle Standards

i) Periodic Examination

It is a legal requirement to ensure the petroleum tanker is registered and undergo inspection by a competent person:

- Before first use; and following repair or replacement of a structural component
- At least every 12 months
- Statutory pressure test after every 5 years for LPG tanks as per Section 70 of OSHA 2007.

ii) Safety Fittings

Minimum Requirements

DO	Ensure the vehicle is fitted with blind spot mirrors.
DO	Check rear facing signs for cyclists are present and clean.
DO	Check that reversing hazard lights are functioning.
DO	Check that the reversing/handbrake alarms are installed, functional and audible.
DO	Check that the audible alarms come on automatically when the reverse gear is selected.
DO	Be aware that handbrake alarms alert the driver if the handbrake is not engaged if they are leaving the cab, and are a safety measure to ensure that vehicles do not roll away unattended.
DO	Ensure the rear CCTV is fitted and operational.
DO	Ensure the vehicle is equipped with at least two safety triangles.
DO	Ensure the vehicle is equipped with functional fire extinguisher.
DO	Ensure the vehicle is equipped with a spill kit.

Rear Facing CCTV

DO - Use the reversing camera only as an aid in conjunction with your mirrors.
DO - If you are not sure that the area that you are going to reverse into is clear...'STOP AND CHECK'

Reversing Lights

DO	Keep reversing lights clean and operational at all times.
DON'T	DO NOT allow reversing lights to be obscured by folded back mud flaps etc

NOTE:

Reversing requires supervision from a site reversing observer (Banksman). Ensure whoever is supervising exchanges and agrees what signals will be used before you proceed. Drivers must recognize they are always responsible for all activity or actions they take when controlling their vehicle, whether the reversing observer is supporting or not. When a Banksman is provided, do not reverse until told.

Rear Strobe Lights

DO	Ensure that you have rear strobe lights when access and egress of vehicles in live lanes is required.
DO	Ensure that you use them for any hazardous situation where a vehicle needs to stand out.
DON'T	DO NOT allow your rear strobe lights to be obscured by folded back mud flaps etc

iii) Condition of the vehicle (Traffic Rules)

Seats with serviceable seat belts	Head lamps, indicators, parking and brake lights
DCP Fire extinguisher	Wiper and windscreens, windows
First aid kit box	Driving and rear view mirrors
Life savers (one pair)	Warning signs/bell
Emergency door	Good condition wheels/tyres
Door opening outwards (ideal)	Remote controlled door (ideal)
Tool box (wheel spanner, jack)	Spare wheel

4.4 Accident Reporting and Management

An Accident is an unplanned event that results in injury to people, damage to property or the environment. **A Near Miss** is an incident that has not resulted in any injury or damage but had the potential to do so.

DO	STOP immediately and report the matter to the police, no matter how small it is.
DO	Stay at the scene until emergency service arrives.
DO	All incidents, road traffic or personal injuries, that occur during transport of petroleum products must be reported to EPRA within 48 hours.
DO	Report suspicious trade on petroleum products to EPRA.
DON'T	It is an offence not to stop and report to the police.

Near Miss and Hazard Alert (NMHA) reporting is an early warning system which can help the transporter in identifying that there is a potential for an incident which could result in injury or damage.

5. Road Infrastructure Section

5.1 Classification of Roads

Roads serve two basic traffic service functions:

- i) To provide traffic mobility between centres and areas – rural context; and
- ii) To provide access to land and properties adjoining the roads – urban context.

The major function of rural roads is to provide mobility and cater for through and long-distance traffic where high and uniform speeds and uninterrupted traffic flows are desirable. On the other hand, the major function for urban roads is to provide land access mobility, hence high speeds are unnecessary and, for safety reasons, undesirable. Road classification establishes a hierarchy of roads according to the importance of each road in the network and the socio-economic function they serve or intend to serve. This enables the agency that is responsible to effectively plan upgrade and maintain the roads. Design standards and level of maintenance requirements are directly related to the road functional class, together with existing and predicted traffic flow on the road Infrastructure is therefore a key pillar for road safety. In the National Road Safety Action Plan 2024-2028, road design and safety are considered as integral components. Road engineering aspects therefore posits a critical risk factor on road safety.

5.2 Speed Limits

There is a direct, causal link between speed and safety outcomes. Speed has an impact on both the likelihood of a crash occurring, and the severity of the outcome when crashes happen. Speed is a primary factor in geometric design of roads.

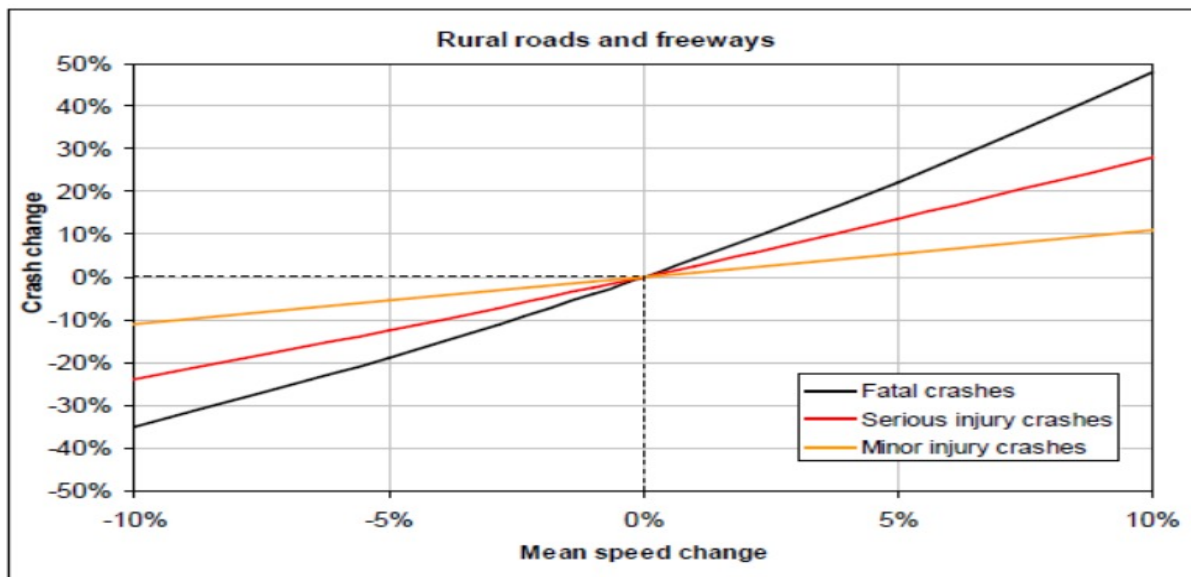


Figure 2: Relationship between change in speed and change in crash risk. Source: Elvik 2009

Reference: Turner, B., Job, S. and Mitra, S. (2021)

The speed of vehicles on a road depends on capabilities of the drivers, vehicle condition, physical characteristics of the highway, prevailing weather, the presence of other vehicles and the legal speed limitations. Roads intended to provide long distance travel are designed with a higher speed while those which provide short distance travel are given a lower design speed. Speed limits that take into account the function of the road and its environment are a fundamental tool for speed management. Major roads are typically wider, have higher speed limits, and carry more traffic than minor roads, often serving as main arteries for transportation, while minor roads are narrower, have lower speed limits, and connect to major roads or serve local areas. It is therefore critical for the transporter to establish the class of roads traversed by the vehicle and develop a transport policy setting out speed limits taking into account the Highway Code and all foreseeable hazards along the route.



DO - Drive at a reasonable speed at all times, 65KPH.

DO - Adjust your speed to suit the weather, visibility, the road, the traffic conditions and your ability to control the vehicle.

DO - Reduce speed

- At night and at dusk
- In rain, mist, fog and dust
- On narrow winding roads
- As you approach an intersection, level crossing or bridge
- When you meet another vehicle on a narrow road
- When you meet animals or there is a possibility of meeting them

DO - When driving on a major road slow down when approaching an intersection.

DO - On a minor road, Stop and check for oncoming traffic before moving off.

DO - When approaching an intersection, give the right of way to vehicles on the major road.

DO - When travelling on a road with fewer lanes, give way to vehicles travelling on roads with more lanes.

DO - Avoid built up areas and town centres where by-pass roads have been provided.

DON'T - NEVER drive so fast that you cannot stop well within the distance you can see to be clear.

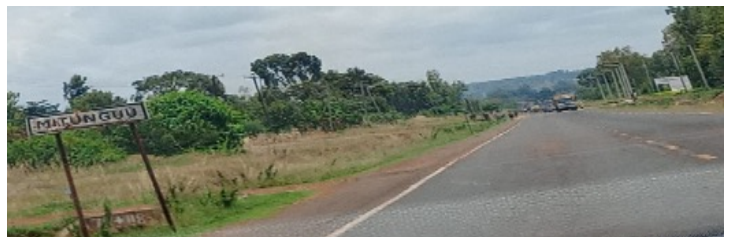
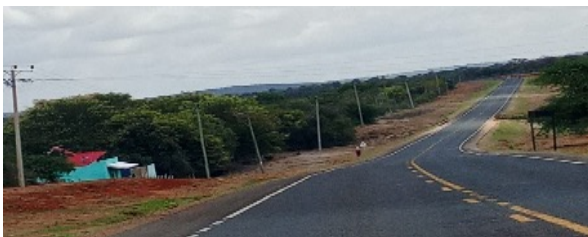
DON'T - DO NOT speed on unfamiliar roads.

DON'T - DO NOT freewheel.

DON'T - DO NOT exceed any speed limit indicated.

5.3 Road Terrain

Topography, land use and physical features are critical factors in road design. Terrain is a major factor in determining the physical location, alignment, gradients, sight distances, cross-section and other design elements of a rural road. Flat terrain present difficulties on drainage, encourage monotonous straight alignments with abrupt changes in direction which may cause problems for drivers because the terrain gives no indication of what to expect. In mountainous areas, route location and design features are almost entirely governed by the terrain. Drivers are advised to remain alert and drive with caution to safely maneuver through steep descents, sharp corners, meandering terrain, bridges and such features along the roads.



DO - Anticipate abrupt changes in direction or sudden traffic when driving on flat terrain.

DO - Engage the right gear.

5.4 Erosion

Drivers must take precaution when driving on roads through areas with possible occurrences of landslides, slips, earth flows and rock falls. Such areas together with sections with deep gullies or bridges have been provided with guardrails but drivers must be alert for safety



DO - Avoid driving in areas of unstable soil and marked erosion.

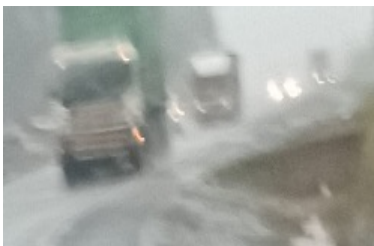
DO - Slow down when approaching such areas erected with roadside guard rails.

DON'T - DO NOT drive too close to the edge of steep road shoulder.

DON'T - DO NOT damage the guard rails

5.5 Traction Stability Vs Weather Conditions

Hydroplaning, or aquaplaning, is a dangerous driving condition in which water causes the tires to lose contact/traction with the road surface. When a tire fails to disperse water quickly enough, the contact patch starts to ride on the surface of the water causing hydroplaning.



DO - Adjust your speed to suit the weather, visibility, the road, the traffic conditions and your ability to control the vehicle.

DO - Reduce speed in rain mist, fog and dust

DO - Ensure tread depth for the tires are in good condition during wet weather.

DO - Maintain correct tire pressure. Underinflated tires can be more prone to hydroplaning, while badly overinflated tires can reduce grip in any situation.

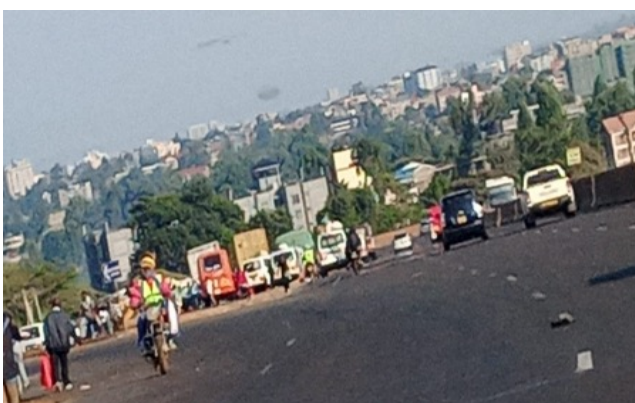
DON'T - Never drive so fast that you cannot stop well within the distance you can see to be clear.

DON'T - Avoid sudden brakes and abrupt, herky-jerky steering movements in wet weather. These can induce a skid.

5.6 Traffic Volume

The traffic volume on a specific road section can vary significantly between peak hours, daily traffic and seasonal flows. The extent of the variation depends on factors such as the road function, the traffic conditions, location and environment. Generally low traffic volume roads such as Class F and Local Access roads, have low design speeds unlike high traffic volume roads. Reducing motor vehicle speeds in areas where the road user mix includes a high volume of vulnerable road users such as pedestrians and cyclists is especially important.

This is highly recommended for tanker drivers plying the road network within Nairobi and Central regions.



DO - Slow down.

6.0 High Risky Zones Along Selected Routes

6.1 Nairobi Region

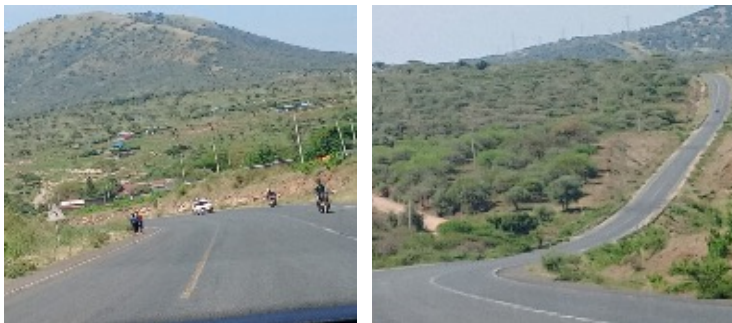
6.1.1 Reported Accident hot spots		
Location	Site Photo	Comments
Mutarakwa Kamandura, Kiambu County		• Heavy Fuel Oil spillage • 12919litres spilled • Caused by overtaking at a T-junction (lost control)
Primarosa area in Athi River, Machakos County along Nairobi-Mombasa Highway		• Rollover due to driver fatigue (lost control)
Lari near Total Kimende petrol station		• Fatal crash. Tanker rammed into a stopped matatu by the roadside for passengers to alight. • Caused by speeding and failure by tanker driver to maintain safe distance.
Kamandura-Maimahiu (Monkey Corner)		• Rollover attributed to brake failure along downhill gradient. • AGO spillage
Githurai along Thika Super Highway		• Cabin fire due to wiring fault. Product on board PMS

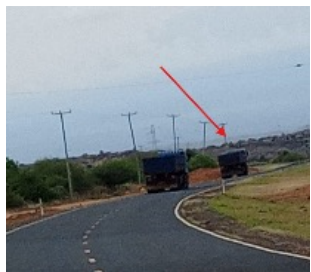
Carwash Area, Githurai Footbridge along The Thika Superhighway (Nairobi County)		• Lost control due speeding vehicle that cut-in after overtaking; lost control, hit rode side bollards and toppled over. Attributed to speeding and distraction
Mathare Valley Overpass along Outering Road, Nairobi County		• Reckless driving by saloon car which stalled but tanker driver failed to stop, rammed into the car causing the accident. On impact the vehicles went up in flames.
Muguga along Naivasha – Nairobi Road		• Reckless driving behaviour • Poor visibility at a hilly terrain coupled with darkness (wee hours of the morning) and drizzling weather conditions at the time.
Mchana Estate along Ruiru - Githunguri Road in Kiambu County		• Speeding
Mto Mawe Greenpark Area along Mombasa Nairobi Road		• Tanker rollover due to speeding coupled with cutting in by a saloon car while overtaking. • LPG transhipped safely, no spillage.
OI Doinyo Orok Area Near Maili Tisa Along Kajiado Namanga Highway, Kajiado County		• Rollover due to reckless overtaking. Ended up with head-on collision between two dry cargo trucks.

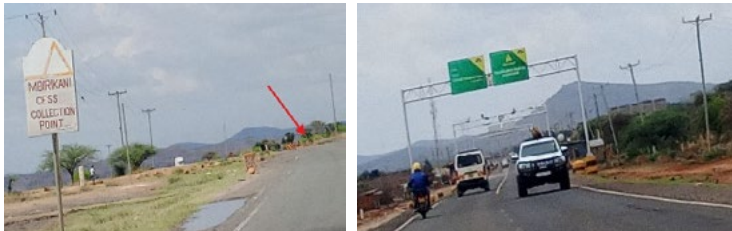
Lukenya, Mavoko Sub-County along Mombasa Road		Rollover due to failure to control the vehicle (attributed to driver fatigue).
Kamandura Area, Along Kamandura-Mai Mahiu-Narok Road		Rollover due to speeding under wet conditions.

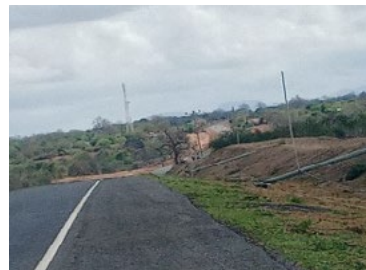
6.1.2 Identified Hot Spots During the Survey

Location	Site Photo	Comments
Southern By-pass Gichini area	 	- Sudden entry of pedestrians - Dead-ended climbing lane serving as matatu stage
Waiyaki Way		Shrub between the carriageway.
Limuru	 	- Heavy traffic flow - Livestock hazards - Worn out road shoulders
Limuru Flyover	 	- Area prone to fatal accidents at Limuru - People seated at the guard rails on the flyover.

Limuru Viewpoint		• Watch out for freewheeling hazard, poor lane discipline • Steep section with no guard rails.
Kijabe		• Roadside hawkers. • Narrow road shoulders • High traffic volume
Kinale Forest junction & Soko Mjinga		• Junction at bus stop • Narrow road shoulders • Roadside hawkers
Kikuyu/Kibera slums area		• Faded lane markings • Undesignated pedestrian crossing
Kajiado -Namanga		• Undesignated bus stop at a blind junction at a bend section of the road • Beware of animal crossing.
Namanga Road section at Ngatatoek area		• Flat terrain. • Wildlife crossing
Ilbisil / Kumpa area		• Sharp bend at Ilbisil area • Mountainous terrain at Kumpa area

Malili	 	• Prime mover of the LPG tanker not fitted with reflective tapes • Petroleum tankers parked by the roadside
Salama	 	• Undulating terrain with sharp bends
Salama		• Meandering steep terrain
Emali	 	• Trucks parked by the roadsides.
Emali- Oloitoktok Road	  	• Roadside hawkers. • Milk vendors by the roadside • Lorry trucks
Simba Cement Factory	 	• Traffic congestion • Pedestrians • Clinker trucks
Oloitoktok border point	 	• Traffic at border point customs clearance • No designated holding area for petroleum tankers.

Oloitoktok/ Kimana		• Distraction (view of the peak of Mt.Kilimanjaro). • Market centre at Kimana
Mbirikani/Weighbridge		• Erected spikes on the road. • Sharp bends. • Slow traffic flow.
Suncity area		• Market centre • Lorries transporting livestock
Emali-Makindu		• Bridge • Steep gradient
Makindu/Kiboko		• Heavy load trucks • Bridge and speed bumps
Makindu		• Faded speed bump, road junction, road side hawkers, parked and slow moving trucks.

Kibwezi-Mtito Andei	 	• Steep gradient, bridge and livestock by the Roadside • Road hawkers at Thange • Erected speed bumps
Kitui Kanyonyo road	 	• Sloping terrain towards Kibwezi Virtual Weighbridge. • Ndauni area with collapsed electricity posts, unmarked road shoulders, bridge under construction.
Ikutha	 	• Charcoal traders by the road side • Sharp bends with untrimmed hedge causing obstruction
Ikutha area	 	• Wildlife crossing • Sharp bends. • Bridge under construction
	 	• Potholes. • Matatu stage at junction.
Bultobanta	 	• Sheep and goats grazing by the roadside of the highway. • Charcoal traders by the roadside
Tula	 	• Diversion due to ongoing road maintenance. • Camel crossing.

Tula/Madogo		• Potholes and non-motorized transport at Tula. • Pedestrians, riders, traders at Madogo
Tana River area		• Diversion due to ongoing construction.
Kilimambogo area		• Overlapping load • Potholes.
Kyumbi Mlolongo Road		• Dual carriageway with unmarked U-turns.
Machakos Wote road		• Meandering terrain with sections of steep edges of the road shoulders.

Kenol Kangundo Road		Sharp bends and speed bumps at Kathiani.
Kenol/Kathiani	 	Oxen at Kenol, NMT at Kathiani
Kinyau/ Tala Kangundo Road	 	- Sharp bends - Undulating terrain with multiple speed bumps
Lungalunga Road	 	Petroleum tankers parked by the roadside.

6.2 Central Region

6.2.1 Reported Accident hot spots

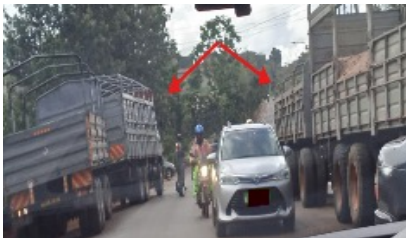
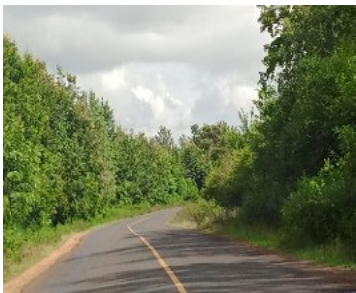
Location	Site Photo	Comments
Thika Garissa highway		Fatal crash between sand lorry with PSV matatu. LPG cylinder in the matatu exploded on impact.

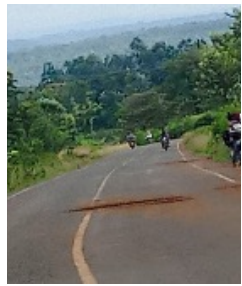
Sagana River Bridge at Marua along Nyeri – Karatina Road, Nyeri County		Wrong overtaking
Kambiti Kwa Muthike Area in Makuyu along Kenol-Sagana Road, Murang'a County	 	Toyota Hilux pick up made a “U” turn then stopped suddenly obstructing the Petroleum road tanker along a steep gradient.
Kithyoko along Nairobi Garissa Road, Kitui County		Speeding and obstruction by a stalled truck during night hours.
Wamumu Area along Mwea - Makutano Road, Kirinyaga County	 	Reckless obstruction by a speeding private vehicle

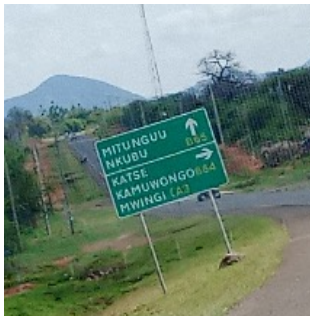
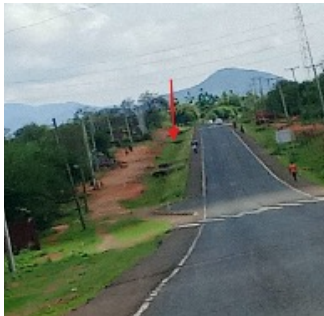
6.2.2 Identified Hot Spots During the Survey

Location	Site Photo	Comments
Nairobi –Embu Road	 	Pedestrians seated on the guardrails at Makutano Interchange

Nairobi –Embu Road		Rughazi Bridge and sharp corner at Kirinyaga Embu border.
Nairobi –Embu Road		- Pools of water on the road due to poor drainage. - Potholes.
Nairobi –Embu Road		Multiple speed bumps on steep descend towards Rughazi bridge.
Wanguru		High traffic; faded markings for the speed bumps.
Kianjiru		Undulating terrain with sharp corners.
Mururi		Slopes and sharp corners.

Embu-Kiritiri road	 	• Unmarked speed bump • Sharp bend, unsafe parking, road shoulders eroded
Embu town	 	• Double parking • Unmarked speed bump
Embu –Kiritiri road	 	• Unmarked bumps at: • KPLC substation; and • Jeremiah Nyagah National Polytechnic. • Sudden entry of motorcyclists with a pillion passenger.
Embu –Kiritiri road	 	• Unmarked bump at cess point • Meandering road with steep slopes.
Muraru/Kiritiri markets	 	• Trade activities; • Congested with human traffic; • Motor bike riders • Deposits at the road shoulders due to poor drainage
Kiritiri Siakago Road	 	• Poor visibility due to overgrown vegetation by the roadside. • Meandering road with eroded road shoulders.

Bright Future academy	 	Speed bump at a sharp corner
Kanyunikanja	 	Market centres at Kanyunikanja and Siakago
Siakago-Ugweri road	 	- Meandering road - eroded road shoulders - overgrown vegetation by the roadsides. - Unmarked speed bumps
Siakago-Ugweri road	 	Potholes
Ugweri	 	- Milk vendors-motorcycles. - Pedestrians, motorcyclist, business vendors and vehicle traffic
Ugweri-Mitunguu road	 	- Pedestrians - Motorcyclists - business vendors - farm machinery - matatus.

Kanyuambora market centre	 	• Pedestrians, • motorcyclist • business vendors and • vehicular traffic.
Ugweri-Mitunguu road	 	• Steep meandering terrain.
Ugweri-Mitunguu road	 	• Caution of heavy vehicles turning • Animal crossing
Ugweri-Mitunguu road	 	• Spikes at cess collection point.
Ugweri-Mitunguu road	 	• Speed bump • Bridge • Lane markings faded • edge of road shoulders steep.
Mitunguu Nkubu Road	 	• Speed bump with no signage at sharp bend • edge of road shoulders steep. • Junction to Kathwana county headquarters

Mitunguu Nkubu Road	 	• Undulating terrain. • Marimanti junction
Kathwana-Marimanti road		• Lane markings and speed bumps not marked • sharp bends; roadside vegetation not trimmed. • Chakariga market centre • Marimanti-Chakariga junction
Chakariga -Marimanti road	 	• Bridges along Chakariga-Marimanti road under construction. • Narrow road
Chakariga -Marimanti road	 	• Livestock • Road narrow, not marked with steep road shoulders.
Chakariga -Marimanti road	 	• Marimanti G.K. Prison • River Kathitha bridge near Marimanti Level 4 County Hospital.
Marimanti market centre		• Trade activities; high traffic of vehicles, pedestrians and cyclists

Kathwana-Mitunguu Road	 	- Beware of turn off to Baboon hotel. - Beware of farm machinery
Kathwana-Mitunguu Road	 	Mirage view at Nkarini area.
Kathwana-Mitunguu Road	 	Long straight terrain at Tunyai and Mitunguu area.
Kathwana-Mitunguu Road	 	Mitunguu-Nkubu road junction
Mitunguu-Nkubu Road	 	- unmarked speed bump; - road shoulders encroached by farmers. - Livestock hazard
Mitunguu-Nkubu Road	 	- Heavy commercial vehicles, motorcyclists and pedestrian crossing; - Faded lane markings.

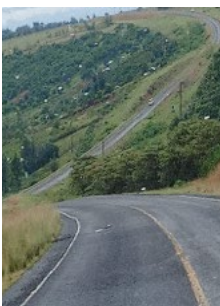
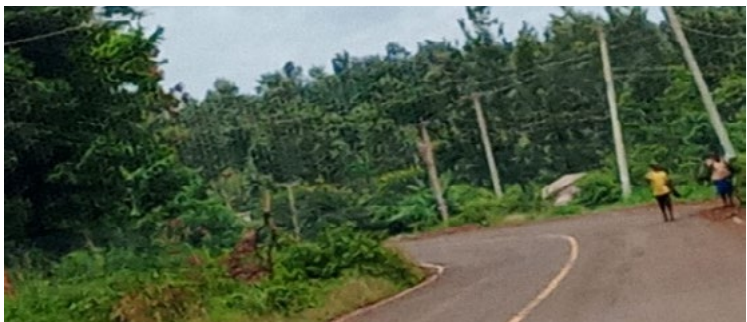
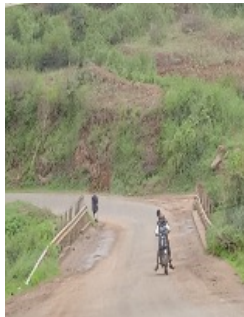
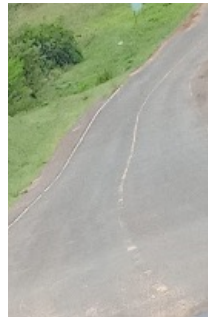
Mitunguu-Nkubu Road	 	• Kamachege market centre. • Overlapping load on motorbike at Igoki area
Nkubu Nairobi Road	 	• Mwichune market, overloaded motorbike. • Lane markings not clear. • Sharp corner on slope descend
Nkubu Nairobi Road	 	• Ntharene market • Meandering road at Kanyakine area
Nkubu Nairobi Road		• Sharp corner at ascend near Kanyakine followed by meanders at Kithogu and Mbaine areas.
Nkubu Nairobi Road	 	• Spikes at cess collection point from Meru County to Tharaka Nithi County.
Nkubu Nairobi Road	 	• Sharp corners towards Makori Girls High school junction.

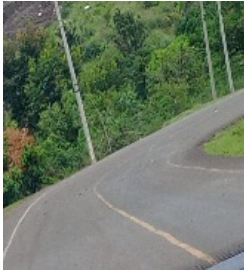
Nkubu Nairobi Road		Nithi bridge
Nkubu Nairobi Road		Meandering steep terrain towards Nithi Bridge
Nkubu Nairobi Road		Meandering steep terrain towards Nithi Bridge
Nkubu Nairobi Road		Nithi bridge
Nkubu Nairobi Road		Nithi Bridge
Nkubu Nairobi Road		Meandering terrain at Nithi bridge.

Nkubu Nairobi Road		• Pedestrian crossing at Chuka University and Chuka level 4 Hospital. Observe 30KPH • Miraa transporting vehicles
Nkubu Nairobi Road		• Steep terrain and meanders at Ikuu area.
Nkubu Nairobi Road		• Erected spikes at cess collection point at Kiracha for entry from Tharaka Nithi to Embu county.
Embu-Nairobi road		• Steep terrain with sharp corners at Kathageri area.
Embu-Nairobi road		• Undulating terrain at Kathageri area.
Embu-Nairobi road		• Roadside stalls at Kyeni junction. • Runyenjes market centre.

Embu-Nairobi road	 	• Mobilu Furniture Centre road section with sharp corners steep gradient, vehicle and human traffic.
Embu-Nairobi road	 	• Steep slope at Kiangima area. • Trucks turning at the Tiles Factory
Embu-Nairobi road	 	• Pedestrian crossing at the University of Embu and Kenya School of Government Embu.
Embu-Nairobi road		• High human and vehicular traffic in Embu town.
Samson corner-Sagana Road	 	• Motocyclists. • Junctions to Kianyaga, Kerugoya, Ngia Technical & Vocational college, Sagana TTI.
Samson corner-Sagana Road	 	• Kagio town centre.

Samson corner-Sagana Road		• Undulating terrain after Kanjai KAG church area; • Protruding tree branch at Mwhinga Business Centre.
Samson corner-Sagana Road		• Erected spikes at cess collection point into Sagana; • Sagana- Nyeri Nairobi highway junction.
Nyeri Nairobi road		• Overgrown shrubs at the median separating the dual carriageway. • Unauthorized U-turn; • Rider not visible
Nyeri Nairobi road		• Poor visibility due to overgrown shrubs; • Trucks with no chevrons nor reflective tapes.
Nyeri Nairobi road		• Pedestrian footpath not provided, using road shoulder which is a death trap.
Nyeri Nairobi road		• Undesignated stage and people lined up along the carriageway guardrails at Makutano and Sagana area.

Nyeri Nairobi road	 	• Lane indiscipline • Steep terrain • Steep road shoulders • Risk of freewheeling
Makutano Nyeri Road	 	• Motorcyclists with no reflector jackets • Steep undulating terrain • Blind corners
Kenol Muranga road	  	• Sharp bends, bridges and deep gulleys • Steep terrain at Laikipia East Technical and Vocational College
Muranga –Sagana road		• Narrow road towards Wanjii Power Station (Kengen), Kamburwa, Mirira and Maragua dam (Kengen) • Unmarked speed bumps • No road shoulders • Shrubs at the roadside • Increased human traffic
Karatina-Sagana road, Mukangu area	  	• Sharp bends, narrow shoulders with poor drainage system. • Faded speed bumps with no signage. • Railway crossing with no appropriate signage.
Sagana Murang'a Road	  	• Railway crossing and bridge • T-junction and sharp bends

Sagana-Murang'a road at Kabuta	  	• Sharp bends, railway crossing, bridge
Murang'a- Githambo road	   	• Speed bumps with no signage at Gitaro, Gatundu, Mugoiri, Kahuro • Sharp bends and hilly terrain • Potholes at Murarandia area • Tea transporting trucks • Market centres-Gatuya, Kiboi, Kahuro, Ndikwe, Khatu, Murarandia, Muriranjias
Kenol Murang'a road	 	Sharp bends, speed bumps, bridges, narrow road shoulders, steep gradient

7. Interventions to Improve Safety During Transportation of Petroleum Products

7.1 Safe Systems Approach

In order to mitigate potential risks arising from the identified hazards, it is critical for all stakeholders undertaking petroleum transportation via road in these regions to embrace “safe system” approach focused on road safety management, safer vehicles, road users, post-crash response, and driving environments.

Pillar	Scope	Recommendation	Responsibility
Road Safety Management:	Implementing strong institutional frameworks for road safety coordination, planning, and monitoring.	• Transporter to develop and implement safe system approach. • Establish road safety management framework with key performance indicators for effective monitoring. • Develop road safety targets.	County Government, EPRA, Roads Agencies (KeNHA, KERRA, KURA, NTSA), Transporters, National Police Service.
Safer Vehicles:	Ensuring vehicles meet high safety standards, including features like seatbelts, airbags, and advanced safety technologies.	• Compliance to vehicle safety standards. • Seatbelts. • Periodic vehicle inspection and maintenance. • Daytime running lights for two or three-wheel vehicles to increase visibility. • Under-run guards on the front and side of trucks to prevent vulnerable road users from being run over. • Electronic stability control to prevent loss of control.	NTSA, KEBS, KENHA, NPS, DOSHS
Safer Road Users:	Promoting responsible road user behavior through education, enforcement, and licensing programs.	• Enforcement of drunk driving, speed enforcement (roadside or automated cameras), seat belt and helmet wearing to ensure compliance. • Lower speed limits for petroleum tankers to 65KPH (speed governor). • Training tanker drivers to better anticipate and perceive hazards as part of defensive driving skills. • Public education and campaigns on road safety. • Fines and demerit points. • Installation of alcohol interlocks to test the breath of a driver for alcohol and if present above the legal limit, prevent the vehicle from starting. • Installation of fatigue monitoring systems designed to monitor driving fatigue through in-vehicle systems that recognize signs of fatigue (eye-lid movements, yawning, vehicle lateral position, driver headway etc) and provide direct warnings and interventions to prevent continued driving.	All stakeholders

Safer Roads and Roadsides:	Designing and maintaining roads that are safe for all users, considering vulnerable road users like pedestrians and cyclists.	- Erect roadside barriers at road sections with steep road shoulders to shield errant vehicles from hazards in-case they leave the roadway. - Provide pedestrian footpaths. - Maintain effective traffic signs and lane markings. - Install longitudinal audio-tactile line marking (ATLM) on the road edges to warn motorists via vibration and sound that they are leaving their traffic lane. - Install transverse ATLM rumble strips at all hot spots to warn drivers that there is a hazard ahead. - Ensure speed bumps are marked and posted with appropriate signage. - Integrated public transport- organized bus (BRT) and rail services.	Roads Agencies (KeNHA, KERRA, KURA), NTSA, NEMA
Post-Crash Response:	Improving emergency response times, pre-hospital care, and hospital care to minimize the impact of crashes.	- Dedicated phone numbers and logistical support. - Improved equipment and skills for first responders and emergency response units. - Improved first aid skills for the public. - Improved trauma care at medical facilities.	OMCs, Transporters, County Government, NEMA

7.2 Highway Emergency Response Plan (HERP)

The ERP is a safety and contingency plan developed by the transporter (owner of the tanker) which includes all possible emergencies, consequences, systematic response plan in the event of spillage or accidental damage to the tanker, written procedures, functional communication devices on the vehicle, and the resources available. It also provides a detailed list of emergency response personnel, including their cell phone numbers, alternate contact details, and their duties and responsibilities in case of an emergency.

The scope of HERP must cover identification of potential emergencies, mitigation measures to reduce and eliminate the risk or disaster, preparedness plans and actions when disaster or emergencies occur, approach for the mobilization of the necessary emergency services including responders like fire service, police service, medical service, ambulance, government as well as non-governmental agencies and post-disaster recovery, with the aim to restore the affected area to its original conditions.

Purpose of the ERP



To formulate an action plan for all necessary functions that are required to be carried out towards the preparedness, response and management of emergencies.

It describes the emergency response for the organisation, resources available (internal as well as external) and specific response actions required for various types of emergencies.

The ERP provides a guide to:

- Prevent casualties in the unlikely event of an incident/accident;
- Reduce damage to property, machinery, public and environment;
- Develop a state of readiness for a prompt and orderly response to an emergency and to establish a high order of preparedness (equipment, personnel) commensurate with the risk;
- Provide an incident management organogram with clear lines of authority;
- To minimize any adverse effects on people, damage to property or harm to the environment in case of a transport emergency;
- To facilitate a rapid and effective emergency response and recovery;

- vii) To provide assistance to emergency and security services;
- viii) Timely communicate vital information to all stakeholders during an emergency;
- ix) Ensure orderly and timely decision-making and response process; and
- x) Maintain good public relations.



In the event of an incident/accident during petroleum transport, the hierarchy of priorities in the processes should be as follows:

- Safety of the public, in general;
- Safety of the on-scene response team;
- Safety of other support personnel near the scene;
- Safety of survivors;
- Protection of the environment; and
- Clean up and final resolution.

8.0 Stakeholder Responsibilities on Road Safety

The National Transport and Safety Authority (NTSA) is the agency mandated to ensure safe carriageways in Kenya. The axle weight limits are regulated by the Kenya National Highways Authority (KeNHA) through Static, Virtual and Mobile Weighbridges to avoid potential damage to the roads.

No.	Stakeholder	Recommended Responsibilities
1.	Ministry of Energy and Petroleum (MOEP)	• Policymaking for the regulation of petroleum transportation.
2.	EPRA	• Advocating the applicable standards in collaboration with KEBS. • Collaborating with KeNHA, KURA, and KeRRA for treatment of roadside hazards, vulnerable communities, and road assets. • Collaborating with other agencies for awareness and sensitization program.
3.	National Transport and Safety Authority (NTSA)	• Agency mandated to ensure safe carriageways in Kenya. • Responsible for implementation of road safety measures. • Create awareness on safe driving by all, driving laws and penalties. • Collaboration with KEBS, DOSHS, NDOC, NEMA for special audits and inspections. • Collaboration with KeNHA on road traffic management and safety.
4.	Kenya National Highways Authority (KeNHA)	• Enforce compliance with the set Axle Load Limits as per the EAC Vehicle Load Control Act, 2016 • Responsible for removing roadside hazards and ensuring other infrastructure provision on National Highways, i.e., authorised parking for petroleum trucks in collaboration with county governments. • Conducting Road safety audits. • Collaboration with NTSA on traffic management and safety of the Highways.
5.	Kenya Urban Road Authority (KURA)	• Responsible for removing roadside hazards and ensuring other infrastructure provision on urban highways.
6.	Kenya Rural Roads Authority (KeRRA)	• Responsible for removing roadside hazards and ensuring other infrastructure provision on rural roads.
7.	National Environment Management Authority (NEMA)	• Responsible for monitoring and inspection of petroleum transportation companies, for checking the environment management plan in case of any emergencies; and • Collaboration with KEBS, DOSHS, NDOC, NTSA for special audits and inspections.
8.	National Disaster Operations Centre (NDOC)	• Coordination at the national level of all disaster management activities before, during and after the disaster. • Collaboration with KEBS, DOSHS, NEMA, NTSA for special audits and inspections.
9.	International Red Cross St. Johns Ambulance	• First on-scene emergency respondents.
10.	National Police Service (Traffic)	• In charge of enforcement of traffic laws and regulations, as well as during emergencies.
11.	County Governments	• Responsible for providing adequate facilities and maintenance of public infrastructure as per the mandates. • Establishment of medical facilities, rest zones and designated parking for petroleum tankers.
12.	Kenya Bureau of Standards (KEBS)	• Advocacy for certification to regional and international standards.
13.	Transporters	• Internal Safety Audits on a regular basis. • Maintaining a database of drivers and vehicles. • Policy implementation for drivers monitoring and wellness. • Development of journey plans.
14.	Media and NGOs	• Creating awareness and sensitization of communities on road safety, risks and safety measures (Do's and Don'ts) regarding petroleum transportation via road.
15.	PIEA and Other Private Players	• Implementing the recommended road safety measures. • Adoption of recommended international standards, collaborate with EPRA in awareness creation, sensitization, training, and capacity building.

9.0 General Offences

The core objective of this handbook is to create safety awareness. However, it is important for the drivers to exercise due care in the discharge of their functions to ensure compliance to the Highway Code, the Traffic Act and all other applicable Laws and Regulations to enhance road safety. Therefore, in this section, though not exhaustive, petroleum tanker drivers are advised to take cognizance and refrain from situations that may lead to prosecution and conviction for the following general offences, which attract serious penalties including fines and imprisonment.

- i) Driving a petroleum tanker on a road without a valid driving licence.
- ii) Driving a petroleum tanker on a road without a valid EPRA Certificate.
- iii) Engaging a vehicle in the transportation of petroleum without the requisite licence issued by EPRA.
- iv) Speeding.
- v) Driving un-insured motor vehicle.
- vi) Driving under the influence of alcohol/drugs.
- vii) Reckless/Careless driving.
- viii) Causing death by dangerous driving or obstruction.
- ix) Failing to maintain motor vehicle parts.
- x) Overloading.
- xi) Failure to obey traffic signs and signals.
- xii) Failure to park at designated areas.
- xiii) Failing to report an accident.
- xiv) Violation of any provision in the highway code, the Traffic Act CAP 403 and any other applicable Law.

10.0 Conclusion

The survey established that the road network plied by petroleum road tankers in regions mapped was generally in acceptable condition. The critical hazards identified included undulating road terrain due to the mountainous topographical landscape of the region, road hawkers and market centres, fast moving miraa and moguka vehicles, pedestrians, NMTs, and livestock. Responsible road user behavior is therefore the most important intervention to prevent accidents. It is therefore critical for the petroleum road tanker drivers to exercise due care and apply defensive driving skills for public safety. However, strong institutional frameworks and collaboration is required to manage speeding miraa and moguka vehicles in Embu, road hawking and sprouting market centres along the road network, management of NMTs and protection of pedestrians and cyclists who are the most vulnerable road users.

Recommendations

Based on the potential hazards identified, this Handbook recommends the following measures to promote road safety and prevent potential accidents.

- i) Transporters are required to comply with LN 99 of 2019 by ensuring that all petroleum tankers are appropriately fitted with reflective tapes in addition to effective marker lights, side lights and indicator lights to enhance visibility. Additionally, there is need to standardize branding of petroleum tankers in light colours to enhance visibility.
- ii) In line with Section 98 of the Petroleum Act, 2019, each County Government is required to establish a designated parking yard for petroleum tankers. Roadside tanker parking observed at Malili town and at various market centres along the network pose a serious safety risk. Additionally, there is need for designated tanker parking yards at Namanga and Oloitokitok border points.
- iii) Crash analysis data (NTSA 2023) show that the leading cause for RTAs is losing control and most crashes occur between 5pm and 9pm (Ref. Appendix 4 and 5). Promoting responsible road user behavior through education, enforcement, and licensing programs is therefore the most critical intervention to enhance road safety. Compliance to journey planning as per LN 99 of 2019, engaging qualified drivers and ensuring the driver is well rested before each trip are key interventions towards enhancing road safety. Continuous sensitization campaigns on courtesy by road users, promoting the use of seatbelts, child restraints, motorcycle helmets and enforcement actions to curb drunk/drug drivers is vital.
- iv) Conventional pedestrian crossings on the motorways and class A roads in built-up areas should be upgraded to raised pedestrian crossings. Raised crossing slows vehicles and also increases the visibility of pedestrians due to the increased height.
- v) Prior awareness of the potential hazards along the road is critical for the driver. It is therefore fundamental for the Road Agencies to share periodical road safety audits conducted on the roads with stakeholders especially with regard to the risky spots. This will enable new drivers approach such spots with caution to avert accidents.
- vi) Road agencies to enhance road maintenance to ensure the roads are safe for all road users. The survey recommends that road markings need to be renewed regularly to retain their effectiveness. Many sections were noted with illegible lane markings, unmarked speed bumps, missing signage and damaged or missing guardrails. Guardrails at all identified risk spots to be maintained. Facilities such as pedestrian footpath, road shoulders and pedestrian crossing should be provided and maintained in good condition. Except Ngong Road, most of dysfunctional traffic lights on most roads in Nairobi should be restored.
- vii) Collaboration between KENHA and Kenya Railways Corporation (KRC) should be enhanced to ensure railway crossings are adequately marked and posted with appropriate signage.
- viii) Laboratories at the border points to be equipped with appropriate testing equipment to ensure all petroleum products imported through these points undergo comprehensive quality inspection to avoid conditional clearance syndrome.
- ix) OMCs (the transporters) to establish and operationalize a Central Emergency Response unit through collaboration equipped with appropriate emergency equipment and qualified personnel to ensure prompt post-crash recovery in case of an emergency.
- x) Road traders are at risk and pose a major road hazard along the surveyed network. Strong policy framework at County and National Government is required to ensure roadside business activities are undertaken from a safe distance away from the road for public safety.
- xi) Prosecution and extensive use of penalties for the traffic offenders must be enforced to reduce traffic violations and enhance road safety.

References

Ambisizi Ambituuni, Jaime M. Amezaga and David Werner *Risk assessment of petroleum product transportation by road: A framework for regulatory improvement*

Driver Vehicle Standards Agency (DVSA) *Load Security Enforcement Matrix*

LN 8 of 2014: *The Energy (Licensing of Petroleum Road Transportation Businesses) Regulations, 2013.*

LN 99 of 2019: *The Energy (Licensing of Petroleum Road Transportation Businesses) (Amendment) Regulations, 2019.*

Mineral Products Association Driver's Handbook, 2016.

Ministry of Roads, 2009 *3rd Draft Design Manual for Roads and Bridges*

NTSA 2016, Highway Code

NTSA, 2023 Road Safety Status Report

The East African Community Vehicle Load Control Act, 2016

The Energy Act No.1 of 2019 and its subsidiary legislations.

The Petroleum Act No.2 of 2019 and its subsidiary legislations.

Vision RI, 2021 *Consultancy Services for Development of a Road Hazard Management System and Emergency Response Plan for the Petroleum Sector Final Road Hazards Management System and Response Plan*

Turner, B., Job, S. and Mitra, S. (2021). *Guide for Road Safety Interventions: Evidence of What Works and What Does Not Work*. Washington, DC., USA: World Bank.

Appendix-1: Classification of Roads in Kenya

(a) Rural Road Classification

Class	Description	Roads	Trip Length & Design Speed	Examples
S	Class S Roads-Motorways: Highway that connects two or more cities or provide a bypass through a city and carries safely a large volume of traffic at the highest speed, eliminates at-grade intersections using underpasses and overpasses. There are generally no traffic lights or stop signs. Pedestrians, cyclists and mopeds are banned. Sidewalks/ footpaths, specialized pedestrian bridges and tunnels may be provided to enable pedestrians and cyclists cross the motorway.	S1, S2, S3, S4_A, S4_B	- Longer trip length (major function is to provide mobility). - Designed to provide a high level of service with a high speed.	- Thika Superhighway - Nairobi Southern Bypass. - Nairobi Expressway.
A	Major Arterial or International Trunk Roads: Link centers of international importance, cross international boundaries, or terminate at international ports	A1 –A14		- Northern Corridor (A109/104)- Mombasa/ Uhuru Highway/ Chiromo Road/ Waiyaki Way/ Naivasha Road. - Thika Road (A2) that runs to the north-east direction from Nairobi City Centre to Thika, Murang'a, Nanyuki, Embu, Meru to Ethiopia border after Garissa.
B	Minor Arterial or National Trunk Roads: Connect nationally important centers, principal towns, or urban areas.	B1-B153		
C	Primary Roads-Major Collectors or Inter-District Roads: Link provincially important centers to each other or to higher-class roads such as District Headquarters.	C107, C111, C115	- Serve dual function by accommodating shorter trips and feeding the higher classes. - Designed for intermediate design speed and level of service.	- Langata Road (C58), Ngong Road (C60/61), Limuru Road (C62), Kiambu Road (C64), and Kiambu (Juja) “Komo Rock” Road (C98). - To connect these radial roads, there are two ring roads: Outer Ring Road (C59), from Ruaraka in the north to the airport in the south, and Ruiru/Kiambu/ Dagoretti Road (C63) linking Ruiru/ Kiambu/ Kikuyu/Karen/Wilson Airport roads that runs east to west to south across the northern and western sides of the city via Langata Road.

D	Secondary Roads-Minor Collectors or Divisional Roads: Link locally important centers to each other or to a more important center, or to a higher-class road such as Divisional Headquarters.			• Kangari D417, Kaharati D419
E	Minor Roads-Major Local or Major Feeder Roads: Link to minor centers, markets, or local centers.		• Designed for short trip length (primary function is to provide access). • Design speed and level of service low.	
F	Minor Roads-Minor Local or Minor Feeder Roads: Link to groups of rural areas, without a market or at most one minor market. Provide a connection to a sub-location centre, a more important market or the higher level network.			
G	Local Access or Farm to Market Roads: Provide direct access between farming areas and the nearest market or the higher level road network.			
SPR	Special Purpose Roads: Government Roads (G) Settlement Roads (L) Rural Access Roads (R) Sugar Roads (S) Tea Roads (T) Wheat Roads (W)			
U	Unclassified Roads: All other public roads and streets.			

(b) Urban Road Classification

Class	Description
H	Major Arteries or Urban Highways: Provide for through traffic and for relatively long-distance movements between widely separated parts of the town or city. Found only in the largest towns and cities and often represent the extension of the international trunk routes (class A rural) through the urban area; they include any bypasses or expressways. Required to have access control, including segregation of pedestrian and other non-motorized movements.
J	Minor (or Principal) Arterials: Provide the main means of moving between different zones of the urban area, and they serve many towns, the main rural arterial or collector roads (i.e., B or C) passing through the urban area. Serve as principal urban arterials (where there are no urban class A roads). Their traffic volumes may be high enough to justify dualling. Some level of access control through service lanes and segregation of non-motorised traffic will be desirable wherever practicable.
K	Major Collectors: Link arterials and local roads, distributing traffic to residential and other defined zones. Ideally they provide some measure of access control, although most will combine a balance of mobility and access functions.
L	Minor Collectors: Perform a similar function to major collectors, but generally serve a smaller area, with lower traffic levels. They are likely to be the main type of collector in medium-sized towns, but may be absent in smaller towns. They are unlikely to provide any access control and will combine mobility and access functions.
M	Major Local-Local/Shopping Streets: Include the main shopping and business streets in the urban central business district or suburbs of larger towns and cities, other than designated minor arterials. They cater for a high level of pedestrian access to commercial properties fronting directly on the street. Local streets will be connected to arterials, collectors or other local streets.
N	Minor Local –Non-Residential Access: Provide direct access to individual or groups of properties, other than residential areas, or to places of specific social or economic activity, including industrial and commercial areas, and government institutions such as schools, hospitals, prisons, government housing, etc. This class may be appropriate for many of the special purpose roads presently classified as ‘G’ (government) roads. Most roads are likely to be quite short and traffic volume will vary with the type of activity served.
P	Local Access-Residential Access: Roads providing direct access to groups of residential properties, comprising local residential streets and constituting the lowest tier of the hierarchy of urban roads suitable for motorized transport.

Source: <https://lca.logcluster.org/kenya-23-road-network>

<https://transport.go.ke/sites/default/files/2023-07/Part%201%20-%20Geometric%20Design%2C%20Road%20Safety%20Audits%20and%20Traffic%20Surveys.pdf>

Appendix-2: Details of Number of Lanes of Multi-Lane Roads in Nairobi City

	Road Name	Start point	End point	No. of Carriage-ways	Lanes by Carriage-way	Total No. of Lanes
	Nairobi CBD					
1	Chiromo road	Museum hill	Waiyaki Way	2	3	6
2	City Hall way	Moi Avenue	Uhuru Highway	2	2	4
3	Haile Selassie	Landhies Road	Uhuru Highway	2	3	6
4	Haile Selassie	Uhuru Highway	Ngong road	2	2	4
5	Harambee Avenue	Moi Avenue	Uhuru Highway	2	2	4
6	Kenyatta Avenue	Moi Avenue	Posta Road	2	2	4
7	Kenyatta Avenue	Posta Road	Uhuru Highway	2	3	6
8	Kimathi Street	Mama Ngina street	Tubman road	2	2	4
9	Koinange street	University Way	Kenyatta Avenue	2	2	4
10	Landhies Rd	Jogoo Road	Haile Selasie	2	3	6
11	Loita Street	Kenyatta Avenue	Monrovia street	2	2	4
12	Moi Avenue	University Way	Haile Selasie	2	2	4
13	Parliament road	Haile Selasie	Kenyatta Avenue	2	2	4
14	Ronald Ngala	Moi Avenue	River road	2	2	4
15	Taifa Road	City Hall Way	Harambee Avenue	2	2	4
16	Uhuru Highway	Museum hill	Lusaka road	2	3	6
17	University Way	Uhuru Highway Junction	Slip road Junction	2	3	6
18	University Way	Slip road Junction	Miundi Mbingu	2	2	4
19	Racecourse Road	Haile Selasie	Waruingi street	2	2	4
	Surrounding Areas including Urbanized Area					
20	Enterprise road	Lusaka road	Funzi road	2	2	4
21	Forest Road	Limuru road	Muranga road	2	3	6
22	Jogoo Road	Landhies Road	Likoni Road Junction	2	3	6
23	Jogoo Road	Likoni Road Junction	Outer Ring road	2	2	4
24	Juja road	Ring road Ngara	Muratina street	2	2	4
25	Langata Road	Uhuru Highway Junction	Kungu Karumba Junction	2	2	4
26	Lusaka Road	Jogoo Road	Enterprise road	2	3	6
27	Mbagathi way	Langata road	Ngong road	2	3	6
28	Mombasa Road	Lusaka road	JKIA	2	2	4
29	Muranga road	Moi Avenue	Ring road Ngara	2	2	4
30	Muranga road	Ring road Ngara	Thika road	2	3	6
31	Ngara road	Museum hill	Racecourse Road	2	2	4
32	Ngong road (town bound)	Third Ngong Avenue	Fifth Ngong Avenue	1	3	3
33	Ring Road Pumwani	Racecourse Road	Landhies Road	2	3	6
34	Thika road	Muranga road	Metro Boundary	2	2	4
35	Valley Road	Milimani Road	Argwings Kodhek	2	2	4
36	Waiyaki Way	Ring Road Westlands	Metro Boundary	2	3	6

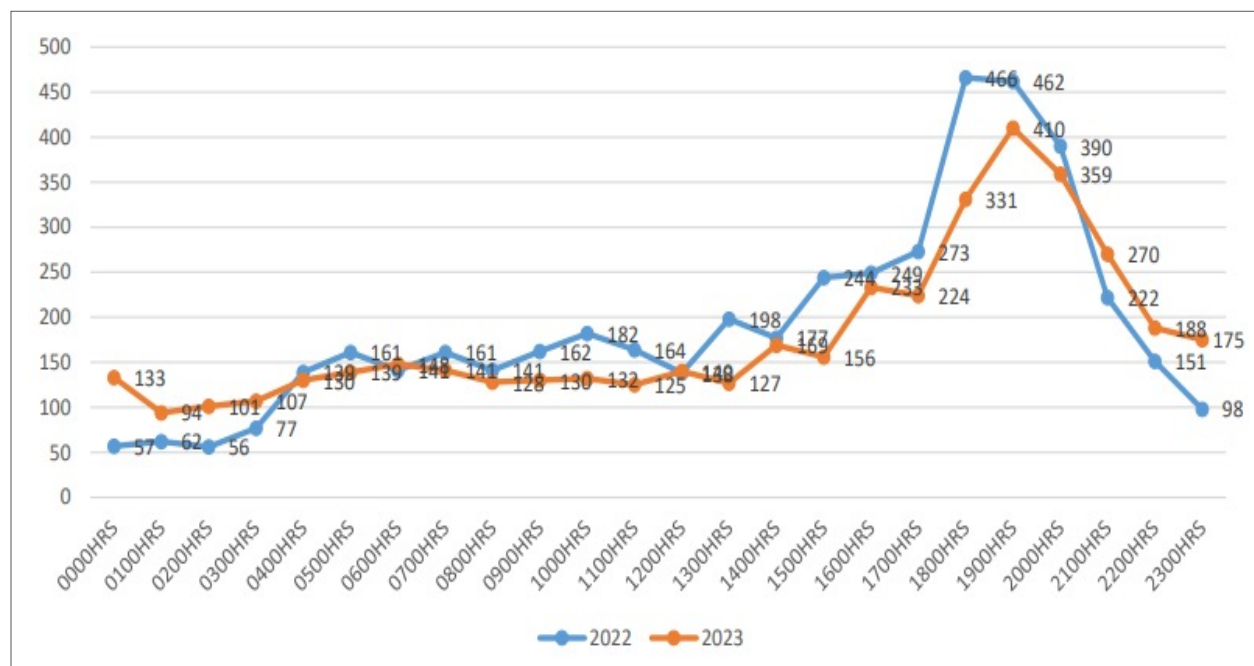
Source: MRPW

Appendix-3: Hazard Class Warning Symbols



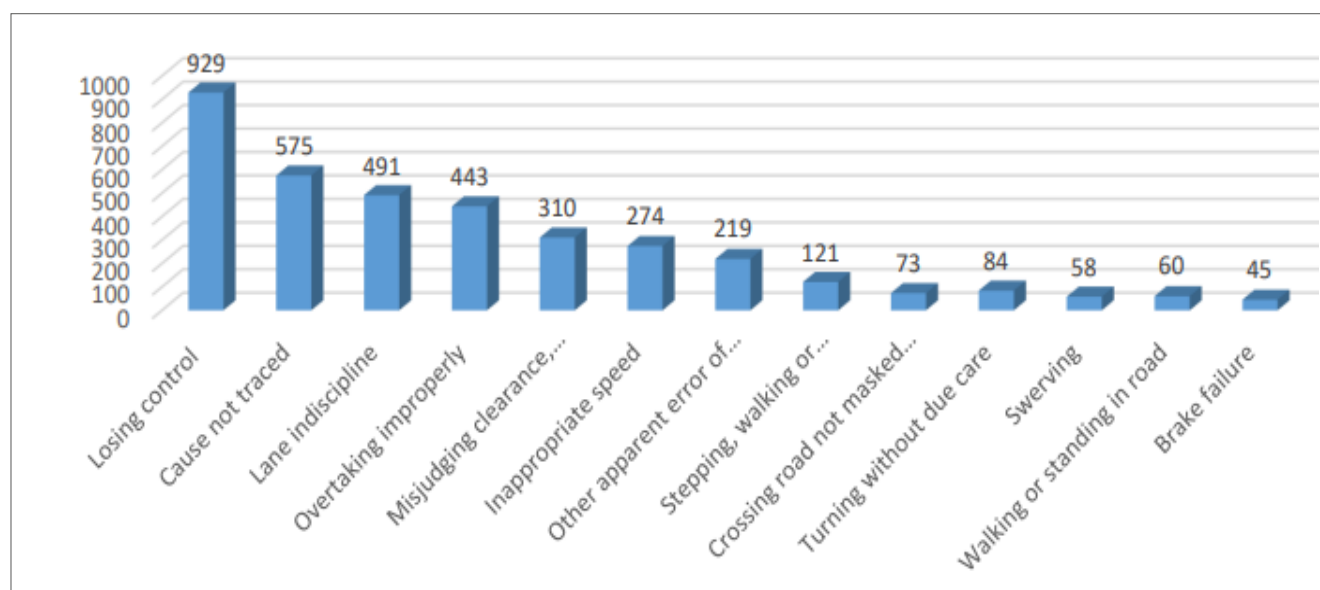
Source: Mineral Products Association (MPA) Driver's Handbook, 2016

Appendix-4: Contribution to RTA Fatalities Associated with Time



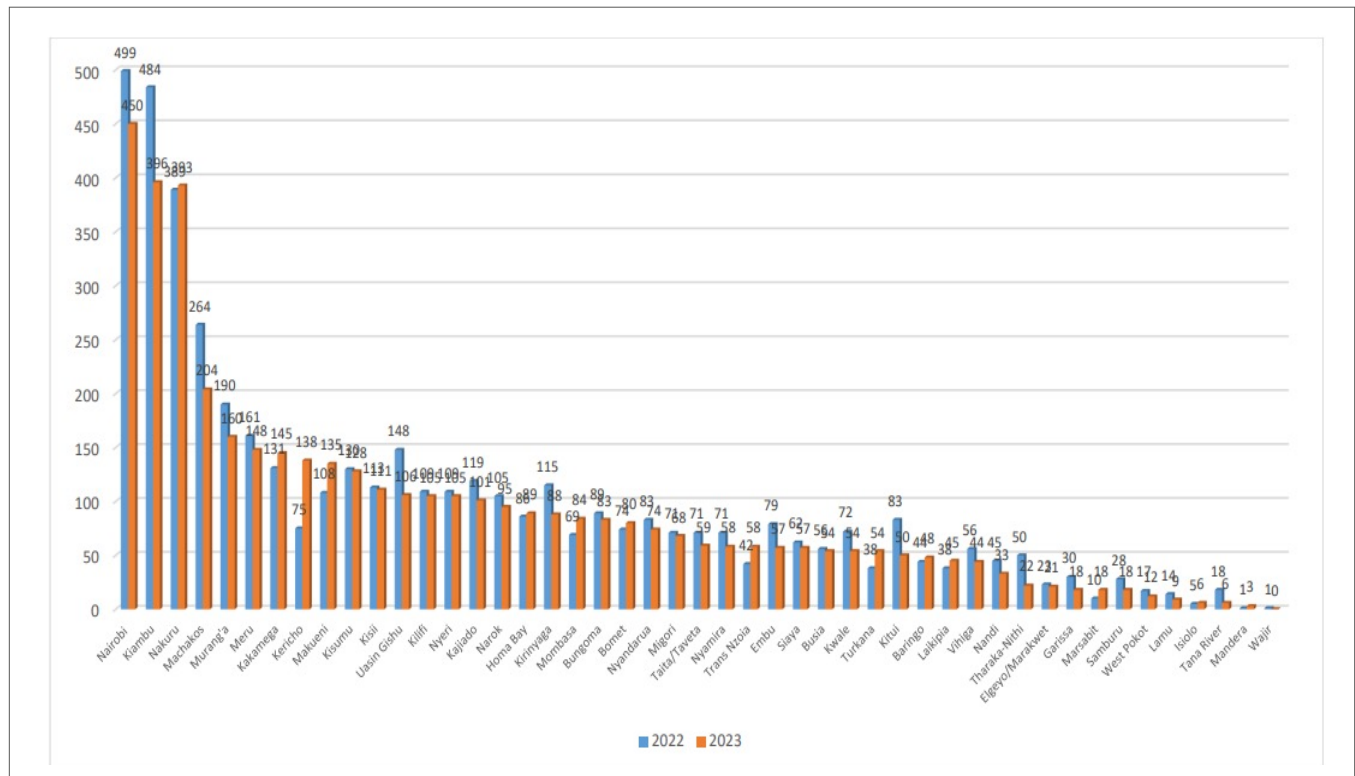
Source: NTSA Road Safety Status Report, 2023

Appendix-5: Leading Causes of RTA Fatalities



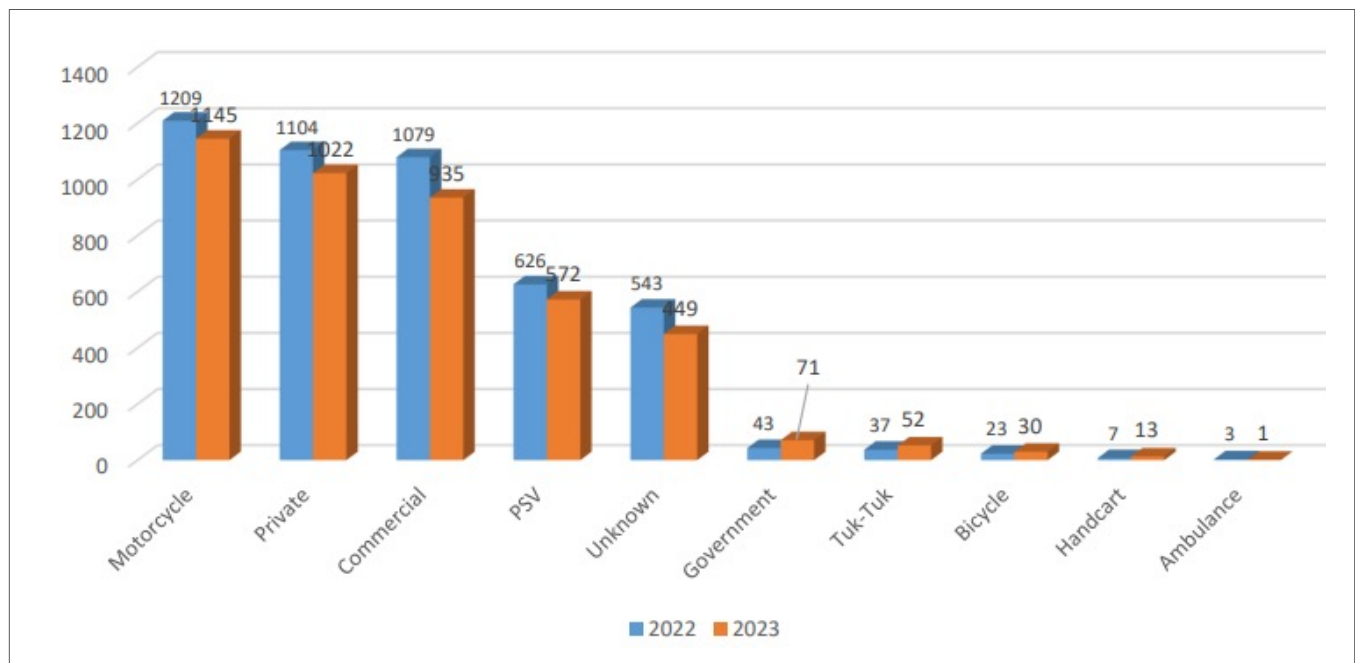
Source: NTSA Road Safety Status Report, 2023

Appendix-6: Distribution of RTA Fatalities by Counties



Source: NTSA Road Safety Status Report, 2023

Appendix-7: RTA Fatalities by Vehicle Type



Source: NTSA Road Safety Status Report, 2023

