REPUBLIC OF MAURITIUS

NATIONAL AUDIT OFFICE

PERFORMANCE AUDIT REPORT

ENHANCING ROAD SAFETY IN MAURITIUS

Ministry of Land Transport and Light Rail

JUNE 2021

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PREFACE

Section 16(1A) of the Finance and Audit Act requires the Director of Audit to carry out performance audit and report on the extent to which a Ministry, Department or Division is applying its resources and carrying out its operations economically, efficiently and effectively.

I am pleased to submit to the Minister of Finance, Economic Planning and Development, and through him to the National Assembly, this Performance Audit Report entitled "Enhancing Road Safety in Mauritius". The sustained investment in road safety interventions over the past years and the adverse socio-economic impacts of road accidents motivated the selection of this subject matter which is considered to be of national interest.

The objective of the audit was to assess whether the Ministry of Land Transport and Light Rail was effective in enhancing road safety against the backdrop of the implementation of the National Road Safety Strategy 2016-2025. The Report contains audit findings, conclusion and recommendations on which the Ministry was given the opportunity to comment. To enhance road safety, the Ministry needs to prioritise measures that improve its management functions, favour value-added interventions and ensure that all stakeholders keep focus on results.

My Office envisages to carry out a follow-up audit at an appropriate time regarding actions taken by the Ministry in relation to the implementation of the recommendations.

I would like to take this opportunity to thank the Permanent Secretary and staff of the Ministry of Land Transport and Light Rail, as well as the officials of the Police Service, Road Development Authority, Ministry of Local Government and Disaster Risk Management and other Authorities for their cooperation and collaboration. I also wish to express my sincere thanks to my staff for their hard work and dedication.

C. ROMOOAH
Director of Audit
National Audit Office
PORT LOUIS

30 June 2021

CONTENTS

		Page
EXECUTIVE SUMMARY		1
CHAPTER ONE – INTRODUCTION		
1.1	Background	13
1.2	Audit Motivation	19
1.3	Audit Objective	20
1.4	Audit Scope	20
1.5	Audit Approach and Methodology	21
1.6	Methods used for gathering and analysing data	22
1.7	Assessment Criteria	26
1.8	Data Validation Process	28
1.9	Structure of the Audit Report	28
CHAPTER TWO – DESCRIPTION OF THE AUDIT AREA		
2.1	Introduction	29
2.2	Regulatory Framework	29
2.3	The National Road Safety Strategy 2016-2025	30
2.4	Roles and Responsibilities of Key Players	32
2.5	Funding the implementation of the Strategy	39
2.6	Road Infrastructures	40
2.7	Safer Vehicles	41
2.8	Road crash data collection and management process	41
CHAPTER THREE – FINDINGS		
3.1	General	43
Section A: Effectiveness of Institutional Management Functions		
A.1	Introduction	45
A.2	Setting up of a Lead Agency to strengthen Institutional Management Functions	46
A.3	Result focus management functions	48
A.4	Coordination among different stakeholders	49
A.5	Adequate legislation to meet requirements of the strategy	50
A.6	Adequate and sustainable road safety funding mechanism	54
A.7	Appropriate monitoring and evaluation of interventions	55
A.8	Adequate research and development and knowledge transfer	55

Continued

CONTENTS

		Page
Section B: Licensing and Admission of Safe Users		
B.1	Introduction	61
B.2	Legal framework, Design and Implementation of Training and Licensing System for auto/motor cycles	64
B.3	Legal framework, Design and Implementation of Training and Licensing System for motor vehicles	70
Section C: Enforcement of Road Safety Legislation		
C.1	Introduction	73
C.2	Enforcement activities through a Road Traffic Enforcement Plan	74
C.3	Enforcement through prosecution and administration of sanctions	86
Section D: Ensuring safe vehicles on the roads		
D.1	Introduction	99
D.2	Regulatory activities of NLTA at Vehicle Examination Centres	100
D.3	Monitoring and evaluation of VECs by NLTA	104
D.4	Specific issues impacting safety of vehicles	105
D.5	Enforcement activities of the NLTA	109
Section E: Promoting Safer Roads and Roadsides		
E.1	Introduction	111
E.2	Collection and analysis of Road Crashes Data	112
E.3	Hazardous Road Location Program	116
E.4	Safe road design	118
E.5	Road Safety Audits	120
Section F: Investing in effective road safety campaigns, sensitisation and education		
F.1	Introduction	127
F.2	Conduct of Awareness campaigns and sensitisation	128
Section G: Focus on results for effectiveness in road safety interventions		
G.1	Introduction	131
CHAPTER FOUR – CONCLUSION		133
CHAPTER FIVE – RECOMMENDATIONS		
5.1	General	135
5.2	Enhancing Institutional Management Functions	135
5.3	Management of Interventions	136
5.4	Focusing on results for effectiveness in road safety interventions	139

Continued

CONTENTS

		Page
MINISTRY'S REPLY		139
APPENDICES		
I	Institutional Set up of the Road Safety Management system	143
II	Audit questions and sub-questions and Problem Tree Analysis	145
III	Whole of Government Approach to Road Safety	149
IV	Stakeholders Analysis	151
V	Checklist for Lead agency role and Institutional Management Functions	153
VI	Status on Action Plan of the National Road Safety Strategy 2016-2025 as of March 2021	155
VII	Traffic Offences Established under Road Traffic Act during period 2015-2019	157
VIII	Convicted Road Traffic Offences during 2014-2019 as per Statistics Mauritius	159
IX	Road crashes clusters in Mauritius	161

FIGURES

		Page
1	The Road Safety Management System	27
2	Schema of the Safe System Approach	31
3	Detection and Prosecution Process of Road Traffic Offences	37
4	Speed limit along motorway at Bois Marchand	57
5	No barrier installed under the footbridge as of March 2021	58
6	Pedestrian crossing motorway instead of using footbridge	58
7	Group of pedestrians crossing motorway instead of using the footbridge	59
8	Density of Road Network and Number of vehicles per Kilometre during 2013-2019	62
9	Number of Accidents, vehicles involved, casualty accidents and casualties	63
10	Number and percentage by type of vehicles involved in accidents causing casualties during 2013-2018	65
11	Number of fatalities by type of user during 2014-2020	65
12	Number of Seriously Injured by type of user during 2014-2020	66
13	Road markings captured during site visit in respect of one fatal accident involving a rider.	66
14	Analysis of contraventions by nature of offence and type of interventions	79
15	Trend in the number of contraventions established during period 2016-2019	80
16	Speeding as a percentage of total offences, percentage detected by fixed cameras and percentage unpaid during 2016-2019	87
17	Condition of footpath, exposing pedestrians to oncoming vehicular traffic	118
18	Photograph showing the bus stops and lay-bys across the motorway	123
19	Photograph showing Baie du Tombeau Roundabout	123

Continued

FIGURES

		Page
20	Photograph referring to the location where the anti-climb fencing had to be installed	124
21	Pedestrian climbing over the Jersey Barrier	125
22	Pedestrian crossing motorway lanes	125
23	Pedestrian crossing motorway at Baie du Tombeau Roundabout	126

TABLES

		Page
1	Number of Road Accidents, Vehicles involved, Killed, Seriously Injured and Killed per 100,000 population for period 2011-2019	14
2	Key Findings of impacts of road crashes on victims	15
3	Main functions of entities operating under the aegis of Ministry and of Key Stakeholders	16
4	Main causes of crashes and weaknesses in the road safety management system	17
5	Key elements of the five pillars of the UN Global Plan for the Decade of Actions for Road Safety 2011-2020	18
6	Expenditure on Traffic Management and Road Safety during 2016-2019	19
7	Funding Requirements for implementation of Strategy	39
8	Road Accident data forms used by Police to record accident data	42
9	Benefit Cost Ratio of Various Road Safety Interventions	43
10	Number of persons convicted for respective number of CRTOs	51
11	Number of speeding offences under the CRTOs detected within a 24-month period for a sample of vehicles during 2018-2020	52
12	Average monthly speeding offences established before and after increase in fines	53
13	Number and Age Distribution of licenses of auto/motor cycles as of December 2018	68
14	Contraventions analysis by number, type of offence and means of establishing same for period 2015-2019	78
15	Contraventions: Main causes of crashes and casualties, and Other Offences as percentages of total number of contraventions established for period 2015-2019	79
16	Analysis of Contraventions percentage wise for periods 2016-17 and 2018-19	85
17	Speeding offences established by Fixed Cameras, number of fines Paid/ Unpaid and amount Paid/Unpaid during 2016-2019	87

Continued

TABLES

		Page
18	Contraventions and Road Traffic Offences as proportions of Total Offences reported in Police Divisions during 2016-2019	90
19	Number of Contravention cases lodged, struck out and closing balance at Prosecutor's Offices	93
20	'Driving motor vehicle with alcohol concentration above prescribed limit' – number of contraventions raised and convictions in Court during 2015-2019	97
21	Speeding contraventions raised and convictions in District Court during 2015-2019	97
22	Number of images captured, rejected, PEDN raised and paid for 12 -month ended 30 June 2020	108
23	Average monthly number of notices issued, roadside checks and officers allocated for enforcement during year 2020	110
24	Number of PF 178 not submitted during period 2018-2020 as of March 2021	113
25	Budgetary Provisions and Actual Amounts spent during last four financial years ended 30 June 2020 in respect of the Strategy	116
26	Details on Training , number of staff and duration in respect of road safety at the Road Development Authority	120
27	Follow up on RSA Reports by the Road Development Authority	122
28	Results of the surveys on the campaigns	130

CASE STUDIES

		Page
1	Follow up on Crash Investigation Report in respect of a fatal accident at Bois Marchand along Motorway M2 on 5 December 2017.	57
2	Impact of National Land Transport Authority (NLTA) not updating its database on establishment of road traffic offences.	89
3	Backlogs of Contravention cases at Western Division.	92
4	Implementation of safety recommendations for project Jin Fei M2 Lane.	123

ABBREVIATIONS AND ACRONYMS

ASOF	Agreed Statement of Fact
Council	National Road Safety Council
CRTO	Cumulative Road Traffic Offence
DVSA	Driving and Vehicle Standards Agency
EOI	Expression of Interest
ERS	Emergency Response Service
FPN	Fixed Penalty Notice
FPS	Fixed Penalty System
GDP	Gross Domestic Product
GPS	Global Positioning System
GRSF	Global Road Safety Facility
iMAAP	Internet-based Microcomputer Accident Analysis Package
INTOSAI	International Organisation of Supreme Audit Institutions
ISSAIs	International Standards of Supreme Audit Institutions
IT	Information Technology
KPI	Key Performance Indicator
KSI	Killed and Seriously Injured
MAAP	Microcomputer Accident Analysis package
MES	Mechanical Engineering Section
METEST	Ministry of Education, Tertiary Education, Science and Technology
MHW	Ministry of Health and Wellness
MITD	Mauritius Institute of Training and Development
MLTLR	Ministry of Land Transport and Light Rail
MNICD	Ministry of National Infrastructure and Community Development
MoFEPD	Ministry of Finance, Economic Planning and Development
MoLG	Ministry of Local Government and Disaster Risk Management
MOU	Memorandum of Understanding
MPILT	Ministry of Public Infrastructure and Land Transport
MPINDULT&S	Ministry of Public Infrastructure, National Development Unit, Land Transport and Shipping
MPS	Mauritius Police Service
MRIC	Mauritius Research and Innovation Council
NAO	National Audit Office
NLTA	National Land Transport Authority
NRSO	National Road Safety Observatory

Continued

ABBREVIATIONS AND ACRONYMS

NSDTC	National Standard Driver Training Curriculum
NTA	National Transport Authority
OECD	Organisation for Economic Cooperation and Development
PAC	Public Accounts Committee
PDL	Provisional Driving Licences
PEDN	Photographic Enforcement Device Notice
PEDU	Photographic Enforcement Device Unit
PF	Police Form
PO	Prosecutors Office
R&DP	Research and Development Programme
RCDMS	Road Crash Data Management System
RCIT	Road Crash Investigation Teams
RDA	Road Development Authority
RDP	Road Decongestion Programme
RSU	Road Safety Unit
RTEP	Road Traffic Enforcement Plan
SDGs	Sustainable Development Goals
SM	Statistics Mauritius
SMF	Special Mobile Force
SSU	Special Supporting Unit
Strategy	National Road Safety Strategic Plan 2016-2025
SweRoad	Swedish National Road Consulting AB
TES	Traffic Enforcement Squad
TG	Technical Guideline
TMRSU	Traffic Management and Road Safety Unit
UK	United Kingdom
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UOM	University of Mauritius
VECs	Vehicle Examination Centres
WBGRSF	World Bank and its Global Road Safety Facility

Executive Summary

Road injuries are the leading cause of injury deaths in Mauritius. In addition to incapacities, body pains, stress, and other physiological trauma, victims also experience substantial economic and social hardships. Road crashes were estimated to cost the Mauritian economy more than Rs 6 billion per annum in terms of loss of productivity, property damage, medical and administrative costs. This excluded annual expenditures on road infrastructure, equipment, personnel emoluments, and road safety awareness campaigns to ensure safe mobility on roads.

According to World Health Organisation and World Bank reports, road traffic injuries and their associated burden are largely preventable, when proven measures are adopted, enforced and sustained. In 2015, a National Road Safety Strategy Plan 2016-2025 was developed and adopted by the Government. The Strategy was based on the 'Safe System Approach' and was also aligned to Sustainable Development Goal 3 "*Ensuring healthy lives and promote well-being for all at all ages*' of the United Nations 2030 Agenda for Sustainable Development.

The Strategy, as per its objective, was expected to lead to a directional downward trend of the annual number of Killed and Seriously Injured as from 2016, to reach a 50 percent reduction (2014 being the base year) by 2025.

Institutions responsible for Road Safety in Mauritius

Road Safety is under the purview of the Ministry of Land Transport and Light Rail, and the Road Traffic Act is the main legislation for all road safety related issues. One of the missions of the Ministry is to improve road safety through a multi-pronged approach including legislative framework, engineering, education, sensitisation, and enforcement. The Ministry is supported by several key stakeholders as road safety involves multi-sectorial and multidimensional issues.

Entities under the aegis of the Ministry

The Traffic Management and Road Safety Unit (TMRSU) aims at ensuring safer roads and traffic fluidity. The National Land Transport Authority (NLTA), as one of its objectives, ensures the implementation of the Ministry's policies in respect of vehicle registration, licensing, parking control, vehicle examination and road transport services.

Four key external stakeholders

The Police Service, mainly through the Traffic Branch, is responsible for the issue and management of driving licences, enforcement of road traffic legislations, education on road safety issues and traffic management.

The Road Development Authority (RDA) is responsible for the construction, care, maintenance and improvement of motorways and main roads, including the infrastructure associated with road safety.

Local Authorities comprising Municipal and District Councils are responsible for the construction and maintenance of roads under their jurisdictions and related road safety aspects with the support of the Traffic Management and Road Safety Unit.

The Ministry of Health and Wellness, provides through SAMU (Service d'aide médicale d'urgence), post-crash emergency response and subsequent care through in-patient and out-patient medical services.

National Road Safety Council

The Council, set up under the Road Traffic Act, provides advisory functions to the Minister responsible for road safety. It also executes the role of a coordinator among the different stakeholders and has the responsibilities of analysing road accident data and evaluating cost effectiveness of road safety.

National Road Safety Commission

The Commission was set up under the aegis of the Prime Minister's Office and comprised key Ministries and Departments with the objective to provide the necessary leadership and the high-level monitoring of all the actions being implemented to achieve the ambitious road safety target of the Strategy.

The Strategy, Safe System Approach and Five Pillars of United Nations Global Plan for the Decade of Action for Road Safety 2011-2020

The Strategy is holistic in nature and adopts a coordinated "Safe System Approach" that includes strategies to target road users, vehicles, and infrastructure. This "Safe System Approach" is an effective means to bring all stakeholders together by recognising the interdependencies that exist between the elements of the road traffic system. It guides the planning, design and management of the operation and use of the road traffic system to provide safety despite human fallibility.

The Decade of Action for Road Safety 2011–2020 was proclaimed by the United Nations General Assembly in March 2010. Through a Global Plan, the goal was to stabilise and reduce the forecast level of road traffic deaths around the world. The Global Plan adopted the Safe System Approach and recommended that countries work within the Five Pillars of Action which are: Road Safety Management, Safer Roads and Mobility, Safer Vehicles, Safer Road Users and Post-Crash Response.

About the Audit

Motivation	The number of Killed and Seriously Injured was not on a decreasing trend during period 2011-2019. Both the number of road accidents and number of vehicles involved had increased by some 10 percent during that period. Some Rs 775 million were already spent on implementation of the Strategy during period 2016-2020, in addition to funding of traffic management, enforcement and road decongestion programmes. Road accidents had regular coverage in media and triggered public debates in respect of the potential causes of accidents, the casualties involved and associated suffering. Particular concern was raised over those killed annually, who were mostly young persons as riders of autocycles and motor cycles. Road safety issues have prompted several debates in the National Assembly. Recent reports of the National Audit Office (NAO) drew attention to unresolved issues in respect of road traffic enforcement, licensing of motorcyclists and privatisation of vehicle examination centres, which were included in the Public Accounts Committee Report of 2019.
Audit Objective	The audit assessed whether the Ministry of Land Transport and Light Rail was effective in enhancing road safety through its management functions.
Audit Scope	The focus was on the planning, organising, resource allocation, leading and controlling roles of the Ministry towards enhancing road safety through prevention of road crashes, and of those entities operating under its aegis. Examination of activities and deliverables was also extended to the advisory and coordination roles of the Council, and interventions of key stakeholders. The audit covered the period January 2016 to March 2021, over the Island of Mauritius.
Audit Approach	The audit was conducted in accordance with the requirements of the NAO Performance Audit Manual, which is based on International Standards of Supreme Audit Institutions (ISSAI) 3000 Performance Auditing Standard of the International Organisation of Supreme Audit Institutions (INTOSAI). The measurement of effectiveness was based on the extent to which the objective has been met and prevalence of conditions necessary to ensure achievement of same.
Audit Criteria	A globally adopted framework was used to examine elements and conditions of the road safety management system and the linkages between them in order to identify current performance levels and objectives achieved. It was complemented by the recommendations formulated in the Strategic Plan, relevant legislations, and best practices.

Key Findings

The Ministry encountered challenges in discharging its management functions of planning, organising, allocating resources, leading and controlling interventions to enhance road safety. Weaknesses in Institutional Management Functions, identified years back, were still prevailing as of March 2021 and affected the Ministry's ability to manage road safety interventions. One of the major setbacks was that there was no Lead Agency to drive the Strategy forward, and to designate one was the responsibility of the Ministry.

The Ministry did not adequately support the planning, organising, leading and coordinating of interventions which fell within the mandate of different stakeholders. In areas where it had control, it took the decisions which it deemed appropriate, but did not ascertain how they were implemented downstream and what results were achieved.

Effective interventions are those that reduce the number of Killed and Seriously Injured. In order to select effective interventions, a result management framework which tracks performance over time is important. As of March 2021, there were no intermediate and outcome indicators that would precisely track performance and progress over time and enable focus on results. Only the long-term target to be achieved by 2025 was spelt out in the Strategy. That was insufficient to ensure that responses were matching the size of the problem of non-decreasing Killed and Seriously Injured.

Specific findings in respect of the seven focus areas of the audit are as follows:

(1) Effectiveness of Institutional Management Functions

Lead Agency functions	Stakeholders have their own responsibilities in respect of road safety, as per their respective mandates. This involves multi-sectorial decision-making, needs for coordination and monitoring of interventions and results through a Lead Agency. The Ministry confirmed that there was no Lead Agency to drive the Strategy forward. This impacted negatively on the implementation of the Strategy and accountability for results.
Result focus	As of March 2021, road crashes were still being mainly monitored through mortality and injury rates. There was no result framework to track progress over time and provide focus on results and evidence-based interventions.
Coordination	The Council carried out coordination among the different stakeholders but lacked the legal authority to address issues when collaboration from different stakeholders was not to the level required for timely implementation and coordination of the safety strategies.

Coordination	Road safety management requires a whole-of-Government approach to provide a common solution through discussion, collaboration and support. The last Council meeting was held in October 2020, after which there was no alternative platform for all the relevant stakeholders to meet and discuss road safety issues.
Adequate legislation	In July 2015, the Cumulative Road Traffic Offences (CRTO) replaced the Penalty Points System as a new sanctioning mechanism for specific serious driving offences. There were loopholes in the legislation and administration of the CRTOs which either enabled the offenders to avoid being caught for related offences, or when caught avoid prosecution and disqualification. Since its enactment, the Ministry did not assess whether the CRTO was being implemented appropriately to deliver the expected results and the need for any adjustment to enhance its efficiency and effectiveness. Concurrently with the CRTOs, a fixed graduated scale of fines to be paid by persons convicted of exceeding speed limits was enacted. The speed limits on the various types of roads were streamlined and simplified. The proportional decrease of the speeding offences was low when compared to the 150 to 300 percent increase in fines. The impact of increasing the fine was further mitigated by the non-payment of same and subsequent struck out of case files during prosecution. The Ministry did not assess the impact of increasing fines on speeding offences with a view to confirm whether this course of action was the best option to address speeding offences.
Adequate and sustainable funding	Sufficient funds were not available to finance several road safety related projects which were considered important by the Ministry. As of March 2021, mid-way through the implementation of the Strategy, there was no plan prepared to identify what would be the priorities in the short to medium term and the associated funding that would be required. Moreover, no mid-term evaluation was carried out to assess whether what was considered priorities in 2016 still ranked high and warranted funding.
Monitoring and evaluation of interventions	The compilation of regular road safety progress reports (at least once a year) is an essential means to assess progress and determine whether adjustments were needed.

	As of March 2021, no periodic monitoring and evaluation exercise were being carried out except for ad-hoc 'bilans' on the Strategy which were presented to the Council.
Adequate research and development, and knowledge transfer	One of the weaknesses of the current road safety management system was that there was no comprehensive processed road data to determine the malfunctioning of the road network system. There were quantitative and useful data in respect of fleet and accidents, but insufficient to understand how accidents occur. The lack of comprehensive data was adversely impacting the formulation and implementation of appropriate measures to enhance road safety.

(2) Licensing and Admission of Safe Users

Increasing motorisation and downward trend in number of accidents and casualties	Due to increasing motorisation in Mauritius, the number of accidents, motor vehicles involved, casualty accidents and casualties were on the increase until period 2016-2019, when it stabilised. High performing countries that have adopted the Safe System Approach, have seen reductions in road traffic deaths and injuries despite increasing motorisation following continuous interventions over several years. The challenge today, for countries like Mauritius, is for the downward trends in road traffic deaths and severe injuries seen in these countries to be replicated in a shorter time frame. To reduce the number and severity of road accidents within a short time, the training and licensing scheme of road users was a priority. However, little progress was made since 2016.
Licensing of riders of auto /motor cycles	Riders of auto/motor cycles and their passengers on secondary seats represented an average of 40 percent of the casualties during period 2013-2018. They were the worst hit in road crashes. Every year, at least 50 of them died, and at least 200 were seriously injured. The re-engineering of the training and licensing system of riders initiated in 2017 had not delivered the expected results. As of March 2021, the challenges related to competent training, testing and licensing were still outstanding with little visibility on how they will be addressed effectively. Based on resources available, there was neither the capacity to train the outstanding number of learner riders, nor the Police Service had the capacity to carry all the tests by 2026.

Training and Licensing for drivers of motor vehicles	The driver training and licensing scheme in Mauritius was conceived without any set standards or national training program. It worked to certain extent, but not always, whereby drivers were not always able to cope with traffic situations. More than five years had already elapsed since the re-engineering of the training and qualification process of Driving Instructors was identified as a priority in the Strategy. The modalities of imparting the training were still at discussion stage as of March 2021.

(3) Effectiveness of Enforcement of road safety legislation

Road Traffic Enforcement Plan	A Road Traffic Enforcement Plan was expected to be developed by the Police Service. Instead, the Police Service submitted a draft Road Safety Plan to the Ministry, describing its prevailing enforcement strategy and the required measures over short to long term periods. The measures comprised the reorganisation of the Road Safety Unit, additional training, personnel, vehicles and equipment. Based on this input, the Ministry prepared a 'Resume of the Agenda on Enforcement Strategy' which did not include objectives, targets, outputs time frame and any measurement and monitoring mechanism.
Targeting high-risk behaviours of road users	On the average, only one out of two contraventions established by the Police Service addressed the main causes of crashes and casualties during period 2016-2019.
Monitoring of the enforcement level by the Ministry	The Police Service regularly reported on the number of crackdown operations, in particular, on the number of contraventions established (i.e speeding, drink driving) in respect of offences considered as being the main causes of road crashes and severe casualties/deaths. However, the Ministry was not provided with the necessary details to ensure that the Police Service was effective in coordinating enforcement with campaigns, carrying out covert operations in accident prone areas, and enforcing traffic laws in synergy with various stakeholders.
Intelligence-led interventions and allocation of more resources to the Police Service	Some 75 percent of contraventions established during period 2016-2019 required the physical mobilisation of police resources out of which only some 25 percent tracked offences related to the main causes of road crashes and casualties.

Intelligence-led interventions and allocation of more resources to the Police Service	In contrast, minor offences which had exceptionally low or negligible incidence on road crashes and severity, accounted for some 43 percent of the contraventions established. Establishment of these contraventions consumed significant resources during interceptions followed by those spent on tracing payments, preparation of case files at police stations level and prosecution units and finally at District Courts. Tracking these offences should have been a lower priority for the Police in the endeavour to enhance road safety.
Efficiency and swiftness of enforcement through prosecution and administration of sanctions	The efficiency and swiftness of enforcement through prosecution and administration of sanctions were impaired by several constraints and challenges. As of June 2018, there was a backlog of some 210,000 contraventions cases still under inquiry and as of January 2021 it stood at some 185,000. This represented a full year workload that had to be carried forward as backlog and comprised several thousands of cases with offences detected more than two years ago. Difficulties in ascertaining the precise addresses of offenders and the ability to warn them personally, further impacted negatively on the efficiency and effectiveness of the prosecution process. This accounted for the struck out of some 37,000 road traffic contravention cases during period 2018-2020, estimated by NAO to cost at least some Rs 100 million (37,000 cases estimated to cost a nominal sum of Rs 3,000 per case) in respect of detection, prosecution and Court proceedings.

(4) Ensuring only Safe Vehicles are admitted on public roads

Harmonised way of carrying fitness control	There was no consolidated and finalised guideline circularised among the Vehicle Examination Centres (VECs) and National Land Transport Authority (NLTA) personnel to ensure that tests were carried out in a harmonised way to ensure roadworthy vehicles on public roads.
Irregularities on fitness certificates	Irregularities in respect of cases where vehicles issued with fitness certificates inside VEC premises were immediately found not roadworthy during surprise checks once outside, were not addressed effectively.

Speed control through fitted devices	There were at least some 10,000 vehicles that had to be fitted with properly functioning speed limiters to ensure that they were safely driven at speeds not exceeding the prescribed limits. The NLTA did not ensure effective compliance to this legal requirement during fitness control of these vehicles. The inclusion of chips or other alternatives in auto/ motor cycles, as envisaged by the NLTA in 2018, to improve their detection by fixed cameras whilst exceeding prescribed speed limits, was outstanding as of March 2021.
Unsafe vehicles on the roads	Vehicles considered as 'Total Loss' after being severely damaged in accidents were reported to be reintroduced on public roads after repairs. This practice was considered to be undermining road safety. The drafting of 'Road Traffic (Total Loss) Regulations' was initiated in 2016 to impose an obligation on concerned parties to report cases of 'Total Loss' to the competent authorities and abstain from reintroducing such vehicles on the roads after repairs. As of March 2021, the regulations had not yet been finalised.
Enforcement	The NLTA did not keep record of the number of vehicles inspected and did not analyse the types and significance of the defects identified. In the absence of these data and analysis, the Ministry could not have ensured that roadside checks were targeting the appropriate number of vehicles, with focus on specific safety aspects.

(5) Promoting Safer Roads and Roadsides

Digitalisation of collection of road crash data	Some Rs 11.5 million had been invested since 2018 in a digitalised system capable of producing analysis of road crash data, useful for interventions like traffic law enforcement and treatment of hazardous road locations. Implementation of this digitalised system was delayed by several issues which had not been adequately addressed by the Ministry.
Funding the treatment of Hazardous Roads	The Ministry invoked insufficient funding as reason for the significant backlog on remedial works to treat hazardous locations. However, funds were annually underspent, leading to a total of some Rs 154 million unspent under the Capital Budget during the last four financial years. Besides, under the Recurrent Budget an annual amount of Rs 40 million was underspent.

Capacity building	The Ministry and the Council had not considered and addressed the need for adequate capacity building in terms of safe road design and national standard for road works among the concerned stakeholders.
Road Safety Audits on new infrastructure	The Road Traffic Act Section 123 AL provides for the carrying of Road Safety Audits in respect of the construction of new roads, traffic centres and in the implementation of new traffic schemes. The Ministry did not ascertain that the RDA was consistently carrying out independent Road Safety Audits on the respective stages of its road projects.
Follow up on Road Safety Reports	The Ministry did not ensure that all Road Safety Audit Reports submitted by the Traffic Management and Road Safety Unit to the Road Development Authority were appropriately followed up and the recommendations considered with a view to address the safety issues raised.

(6) Investing in effective road safety campaigns, sensitisation and education

Communication Plans	None of the Communication Plans prepared by the Ministry/ TMRSU was linked to an accompanying traffic law enforcement plan to reinforce and capture the results of the awareness campaigns.
Impact of awareness campaigns	The Ministry did not use appropriate metrics to measure the impact of the awareness campaigns independently of the surveys carried out by the service providers. Same would have identified what went right with each campaign and what aspects needed attention in subsequent campaigns in order to maximise the intended benefits.

(7) Focus on results for effectiveness in road safety interventions

Focus on results	Issues with coordination over interventions, absence of time frame for the implementation of several programmes and projects and each stakeholder operating within its mandate contributed to lack of ownership and weakening of accountability for results.

Conclusion

Over the past ten years, there has been substantial investment in the move towards enhancing road safety in Mauritius.

The number of Killed and Seriously Injured per 100,000 population, the key outcome indicator in road safety, was not on a downward trend over the past five years.

This non-decreasing trend indicated that the objective of enhancing road safety by the Ministry was not being met, despite all interventions and resources applied. Its response did not match the size of the problem of non-decreasing number of Killed and Seriously Injured.

Key Recommendations

The management functions of the Ministry are critical to enhance road safety and to achieve the target of reversing the trend in number of Killed and Seriously Injured. In order to enhance road safety, the Ministry should focus on measures that will improve its management functions, favour interventions that bring results and maintain focus of all stakeholders on results.

In priority, the Ministry should act as a Lead Agency pending the setting up of an alternate entity with the necessary mandate and resources. In parallel, it should concentrate on the assessment of the effectiveness of its legislation, ensure a better allocation of funds among competing priorities, support adequate research and development, and transfer of knowledge.

The Ministry should accentuate its role of managing the five areas of interventions which produce road safety results. The specific recommendations are as follows:

- The re-engineering of the training and licensing system initiated in 2017 needs more attention to realise the expected benefits.
- The Ministry needs to ensure that an appropriate enforcement plan is prepared, taking into consideration available police resources, the traffic offences that need to be targeted in priority and how the outcomes would be measured and monitored.
- Documentation and criteria for assessment should be harmonised to ensure consistency in the new fitness control system. Assurance that roadside safety checks were targeting the appropriate number of vehicles should be ensured through regular verifications of outputs and outcomes.
- The Ministry should place more emphasis on collection and analysis of road crash data, reconsider prioritisation of funds and enforce the existing legal authority to

provide safer roads and roadsides.

- The Ministry should formulate a long-term Communication Strategy, accompanied by medium to long term Communication Plans, in order to sustain appropriate behavioural change towards road safety. It needs to build capacity among those personnel who are carrying out sensitisation in the community to ensure the effectiveness of their delivery. Future campaigns should be accompanied by planned enforcement and evaluated to ensure that the intended benefits are realised.

In order to guide efficiently and effectively road safety management and interventions, intermediate outcomes need to be defined by the Ministry and agreed by all stakeholders. This will help to analyse what is being achieved in the short to medium term, identify what went wrong and initiate corrective actions.

Summary of Ministry's Reply

- The Road Traffic Act needs to be amended to create a Lead Agency which should have a technical arm and a Secretariat for implementation and coordination of road safety interventions. The Lead Agency should be conferred the authority to request all stakeholders to report on their interventions in order to ensure alignment with decisions already taken in consultation with them.
- The Lead Agency should formulate a performance result framework and regularly report to the National Road Safety Commission on the results and matters calling for better coordination among the various Government bodies and motoring organisations dealing with road safety matters.
- Loopholes in the implementation of the Cumulative Road Traffic Offences are to be studied together with the Police Service and State Law Office for any appropriate measures/amendments to address identified issues.
- The Ministry is working in close collaboration with the Mauritius Institute of Training and Development to set up a Driver Education and Training Centre and intends to recruit a strategic partner to advise on the whole process of reviewing the Driver Standard.
- Vehicle Examination Centres will be requested to install an apparatus to check speed limiters. The Ministry would also look into the possibility of implementing a Global Positioning System on heavy vehicles and buses which would connect to a system at the NLTA for tracking vehicles speeding vehicle beyond 70 kilometres per hour limit.
- The Ministry will find alternative ways to perform small campaigns at lower costs through social media, Radio and Television.

CHAPTER ONE

INTRODUCTION

1.1 Background

According to the World Health Organisation , every year around 1.25 million people are killed (one person killed every 24 seconds) and between 20 and 50 million are seriously injured on the world's roads. Road Safety has become a top priority at national and global level. The Decade of Action for Road Safety 2011–2020, which was officially proclaimed at the United Nations General Assembly in March 2010, sought to save millions of lives by building road safety management capacity; improving the safety of road infrastructure; further developing the safety of vehicles; enhancing the behaviour of road users; and improving post-crash response. The United Nations had made a further universal call to action to address road safety issues through its 2030 Agenda for Sustainable Development Goals (SDGs). As per Target 3.6 of Sustainable Development Goal 3 "*Ensuring healthy lives and promote well-being for all at all ages*', member countries were urged to halve the road fatalities and injuries by 2020.

Road injuries are the leading cause of injury deaths in Mauritius. The physical and emotional impacts of road traumas on individuals, families and friends involved are incalculable. Road crashes also put a heavy financial burden on the community. It has been estimated that road crashes cost the Mauritian economy more than Rs 6 billion per annum in terms of loss of productivity, property damage, medical and administrative costs (as per National Road Safety Strategy for Mauritius 2016-2025). This excludes annual expenditures on infrastructures, personnel emoluments, campaigns etc.

1.1.1 Road Safety statistics in Mauritius

The number of accidents and casualties on Mauritian roads is not on a decreasing trend as per reports published by Statistics Mauritius (Table 1 refers). The number of road accidents had increased by some 10 percent during period 2011-2019. Similarly, the number of vehicles involved in accidents had increased by some 10 percent during the same period.

The number of Killed and Seriously Injured annually has remained relatively constant over the past ten years. As regards Target 3.6 of SDG 3, the number of Killed and Seriously injured per 100,000 population have not been on a decreasing trend thereby to be halved by 2020; instead, it remained to an average of 11.8, remarkably close to the value 11.2 of base year 2014.

Table 1	Number of Road Accidents, Vehicles involved, Killed, Seriously Injured and Killed per 100,000 population for period 2011-2019								
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Road accidents	22,387	21,056	23,563	26,400	28,476	29,277	29,627	29,075	29,644
Vehicles involved	41,294	40,759	41,888	51,264	55,617	57,335	58,178	56,962	58,128
Killed	152	156	136	137	139	144	157	143	144
Seriously injured	487	549	465	505	530	512	560	597	n. a
Killed *	12.5	12.8	11.2	11.2	11.4	11.8	12.8	11.7	11.8

* per 100,000 mid-year population n. a: not available
Source: Statistics Mauritius

1.1.2 Impacts of road traffic accidents

African countries have the highest rates of road fatalities of 23.6 deaths per 100,000 populations, as compared to 9.3 deaths per 100,000 in European countries[1]. Though Mauritius is among the best performing countries regarding road safety in Africa, the rate of number killed in road crashes per 100,000 is some 27 percent higher compared to European countries.

Road crashes absorb massive financial resources: about one percent of Gross National Product in developing countries[2]. Casualties affect mostly economically active persons and have a ripple effect on their dependents, causing suffering and poverty. According to the National Road Safety Strategy 2016-2025, the cost of road crashes is estimated to amount to one percent of gross domestic product (GDP) in low-income countries, 1.5 percent of the GDP of countries in average income and two percent of the GDP of high-income countries, not including the added burden of human suffering, which is not quantifiable.

A Report from the Mauritius Institute of Health published in September 2019[3], described the negative health, economic and social impacts of road traffic injuries on their victims. Some of the key findings on a sample of 396 respondents (359 severe injury and 37 fatal) are described in Table 2. In addition to incapacities, body pains, stress and other physiological trauma among the victims, they also experienced substantial economic and social hardships.

[1] Global status report on road safety 2018. Geneva: World Health Organization; 2018. Licence: CC BY NC-SA 3.0 IGO.

[2] World Bank. 2003. Road Safety. at a glance. Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/9724 License: CC BY 3.0 IGO."

[3] Report of the Study on Health and Socio-Economic impact of Road Traffic Injuries in the Island of Mauritius - September 2019. Mauritius Institute of Health

Table 2	Key Findings of impacts of road crashes on victims
Health Resources	*Most fatalities spent an average of 18.3 days in hospitals, thereby adding substantial burden on the health system resources.*
Physical Incapacity	*Some 95 percent of the severe injury cases reported suffering from certain incapacity after the accident. Half of these victims reported that they had difficulties using their arms and hands, out of which two third stated that they were severely affected.*
Back to Normal Activities	*Above 40 percent of the road crash victims were unable to go back to their normal activities after the accidents , which included more than 80 percent of them having to stop work, including been dismissed or studying.*
Social Lives	*Social lives of victims were significantly disturbed. Some 24 percent of the victims had their relationships with the family strained , in majority of these cases relations were very much upset.*

Source: Mauritius Institute of Health Report- September 2019

1.1.3 Institutions Responsible for Road Safety in Mauritius

Road Safety is under the purview of the Land Transport Department of Ministry of Land Transport and Light Rail (MLTLR) since December 2019 (previously it was a Division under the Ministry of Public Infrastructure and Land Transport). One of the missions of the MLTLR (referred as the Ministry) is to improve road safety through a multi-pronged approach including the legislative framework, engineering, education, sensitisation and enforcement. Aligned to this mission is the responsibility of the Ministry to formulate and implement policies for safe, efficient, and environmentally sustainable services in the land transport sector.

Two entities operating under the aegis of the Ministry as its implementation arms and four external key stakeholders are directly involved in road safety. Their main functions are described in Table 3.

Road Safety involves multi-sectorial and multidimensional issues. It requires a shared, multi-sectorial, responsibility of the Government and a range of civil society stakeholders. These multi-sectorial and multidimensional issues are addressed by a National Road Safety Council (referred as the Council) set up under Section 178 A of the Road Traffic Act 1962 (the main act dealing with road safety). The Council has mainly advisory functions to the Minister responsible for road safety. The advisory functions include the following: road safety measures, related legislations, driver training, road worthiness of vehicles, sensitization, prevention of accidents and enforcement. It also has the responsibilities of analysing road accident data and evaluating cost effectiveness of road safety measures. Equally important is the additional coordinating role it is mandated to execute among various Government bodies (some mentioned above) and several bodies including those dealing with motoring, transport, and insurance.

Table 3	Main functions of entities operating under the aegis of Ministry and of Key Stakeholders
Under the aegis of Ministry as its implementation arms.	The Traffic Management and Road Safety Unit (TMRSU) aims at ensuring safer roads and traffic fluidity.
	The National Land Transport Authority (NLTA), as one of its objectives, ensures the implementation of the Ministry's policies in respect of vehicle registration, licensing, parking control, vehicle examination and road transport services.
Four Key External Stakeholders	The Mauritius Police Service (MPS), mainly through the Traffic Branch, is responsible for issue and management of driving licences, enforcement of road traffic legislations, education on road safety issues, and traffic management.
	The Road Development Authority (RDA) is responsible for the construction, care, maintenance and improvement of motorways and main roads including of the associated road safety aspects.
	Local Authorities comprising Municipal and District Councils are responsible for construction and maintenance of roads under their jurisdictions and related road safety aspects with support from the TMRSU.
	The Ministry of Health and Wellness (MHW) provides through SAMU (Service d'aide médicale d'urgence) post -crash emergency response and subsequent care through in-patient and out-patient medical services.

Source: NAO Analysis

In May 2016, a National Road Safety Commission was set up under the aegis of the Prime Minister's Office comprising key ministries and departments with the objective to provide the necessary leadership and the high-level monitoring of all the actions being implemented to achieve the ambitious road safety targets.

The institutional setup described above is illustrated in Appendix 1.

1.1.4 Enhancing road safety through the National Road Safety Strategy 2016-2025

In 2012, Government with the support of the World Bank and its Global Road Safety Facility , commissioned a road safety management capacity review in order to set out a short to long term strategy to address road safety issues. The Swedish National Road Consulting AB (SweRoad) completed the review in April 2013. SweRoad identified the main causes for road crashes and weaknesses in the road safety management capacity as per Table 4.

Table 4 Main causes of crashes and weaknesses in the road safety management system

Main causes of road crashes	*Weaknesses in Road Safety Management System*
- *Poor quality & inadequate road infrastructure* - *Poor driver behaviour* - *Drink driving* - *High motorisation level* - *Ineffective law enforcement* - *Poor rider/driver training* - *Speed limits too high*	– *The National Road Safety Council was not functioning effectively.* – *No dedicated Parliamentary Committee* – *No official Road Safety Strategy* – *Absence of socio-economic costs of road crash and casualties* – *No coordination of road safety actions* – *Vehicle fitness examination system was outdated.*

Source : Review of Road Safety Management Capacity in Mauritius by SweRoad in 2013

Amongst other recommendations, SweRoad proposed the following: establishment of institutional capacity to develop a country focus on results, creation of a safety performance framework, and development of a national road safety strategy.

In 2015, a National Road Safety Strategic Plan 2016-2025 (referred as the Strategy) was developed and adopted. The objective of the Strategy is to achieve a 50 percent reduction in the number of Killed and Seriously Injured (KSI) by the year 2025 and correspondingly a directional downward trend in the rate-based number of fatalities and serious injuries.

The guiding principles underlying the Strategy are those included in the 'Safe System Approach' and the goals of the UN Global Plan for the Decade of Actions for Road Safety 2011-2020 regrouped into five pillars. The key elements of the five pillars are outlined in Table 5.

Table 5	Key elements of the five pillars of the UN Global Plan for the Decade of Actions for Road Safety 2011-2020
Pillars	**Key elements**
Pillar 1: Road Safety Management	*An overall system of governance in place to establish comprehensive and sustainable national road safety systems.*
Pillar 2: Safer roads and mobility	*Raise the inherent safety and protective quality of road networks to benefit all road users, especially the most vulnerable. Achieved through road infrastructure assessment and improved safety-conscious planning, design, construction, and operation of roads.*
Pillar 3: Safer vehicles	*Encourage universal deployment of improved vehicle safety technologies that prevent crashes and protect road users in event of a crash.*
Pillar 4: Safer road users	*Comprehensive programmes to improve road user behaviour. Sustained or increased enforcement of laws and standards, combined with public awareness/education to increase seat belt and helmet wearing rates, and to reduce drink-driving, speeding and other risk factors.*
Pillar 5: Post-crash response	*Increase responsiveness to post-crash emergencies and improve the ability of health and other systems to provide appropriate emergency treatment and longer-term rehabilitation for crash victims.*
Source : UN Global Plan for the Decade of Actions for Road Safety 2011-2020	

1.1.5 Investment on Road Safety and Road Infrastructure

Over the last five financial years ended 30 June 2020, some Rs 1.4 billion have been spent on road safety by the Traffic Management and Road Safety Unit (Table 6 refers). This includes some Rs 775 million spent on the implementation of the Strategy . It excludes expenditures on Road Safety related activities in other departments like the Police Service, NLTA and RDA.

Projects at an estimated cost of Rs15.5 billion have been earmarked under the new Road Decongestion Programme (RDP) with a view to alleviating traffic congestion along the main roads across the country since financial year 2015-16. Projects earmarked comprise, amongst others, the construction of main roads, highways, flyovers, and secondary roads as well as grade separation and link roads. By end of financial year June 2021, some Rs 5.6 billion would be spent (which include Graded Separated Junction at Pont Fer and A1 M1 Link Road).

Table 6	Expenditure on Traffic Management and Road Safety during 2016-2019					
Details of Expenditure	**Year ended 30 June**					**Total**
	2020	**2019**	**2018**	**2017**	**2016**	**Rs m**
Compensation of Employees	46	49	46	41	37	219
Maintenance	56	51	45	40	9	201
Road Safety Devices*	-	-	52	37	40	129
Acquisition of Other Machinery & Equipment*	-	10	22	21	16	69
Acquisition of Software	1	3	1	2	-	7
Implementation of National Road Safety Strategy (Recurrent Expenditure)	25	34	48	22	-	129
Implementation of National Road Safety Strategy (Capital Expenditure)	188	174	176	108	-	646
Total Expenditure in respect of Road Safety	316	321	390	271	102	1400

**Includes traffic lights and cameras etc.*
Source: Treasury Accounting System

1.2 Audit Motivation

Road traffic injuries and their associated burden are largely preventable, if Governments adopt, enforce and sustain proven measures[4]. Road Safety has been considered as a priority for Government, calling for the implementation of a Road Safety Strategy as from 2016. Preventive principles, aligned to best practices, have been embedded in the Strategy which has been providing the necessary platform to collaborate in order to prevent such tragedies through better road safety management, safer roads, safer vehicles and safe road use.

Over the last five financial years ended 30 June 2020, there has been sustained direct investments in the Strategy, traffic management, enforcement and road decongestion programme. However, statistics show that there has been no downward trend in the number of road crashes, Killed and Seriously Injured over the last four years since the advent of the Strategy. It was costing more than Rs 6 billion annually to the economy in addition to the physical and emotional impacts of the victims and families. Road accidents had regular coverage in media, particularly public concern related to those involving casualties. Road safety issues have prompted several debates in the National Assembly.

Recent NAO audit reports drew attention to unresolved issues in respect of road traffic enforcement, licensing of motorcyclists and privatisation of vehicle examination centres.

[4] "World Bank. 2017. The High Toll of Traffic Injuries: Unacceptable and Preventable. © World Bank."

In its report of September 2019, the Public Accounts Committee highlighted the shortcomings in the management of the privatisation of examination centres and recommended a review of their functioning to enhance transparency and accountability.

It is against this background that the NAO has carried out this Performance Audit entitled 'Enhancing Road Safety in Mauritius'.

1.3 Audit Objective

The audit assessed whether the Ministry of Land Transport and Light Rail was effective in enhancing road safety through its management functions.

The audit was designed by formulating three audit questions and the answers to these questions supported the conclusion against the objective. The audit questions are as follows:

1. Were the Institutional Management Functions provided by the Ministry effective to sustain a national road safety management system?

2. Was the Ministry's interventions effective in:

    - Promoting a system that licensed and admitted safe road users only?

    - Enforcing road traffic legislations to maintain safe driving?

    - Investing in road safety campaigns, education and sensitisation that promoted safe behaviour of road users?

    - Ensuring that only safe vehicles were admitted on public roads?

    - Promoting a mechanism that was conducive to provide safer roads and roadsides?

3. Was the Ministry focussed on results in order to provide direction and effectiveness in all road safety interventions?

These questions were further developed into sub-questions as listed in Appendix II.

1.4 Audit Scope

The focus was on the planning, organising, resource allocation, leading and controlling roles of the Ministry towards enhancing road safety through prevention of road crashes,

and of those entities operating under its aegis. Examination of activities and deliverables was also extended to the advisory and coordination roles of the Council, and key stakeholders. The following areas were covered:

TMRSU	*Engineering measures such as traffic calming and control measures, speed management, road safety audits, sensitisation campaigns and maintenance of Road Crash Data Management System to contribute towards safer roads/ roadsides and users.*
NLTA	*Registration, licensing and regulating road worthiness of vehicles to provide safer vehicles.*
RDA	*Implementation of recommendations of Road Safety Audits, and adoption of road safety aspects in design, construction, and maintenance of roads under their mandate in order to provide safer roads.*
Local Authorities	*Provision and proper maintenance of safer urban and rural road infrastructure including traffic calming devices, drains and footpaths.*
Police Service	*Licensing of drivers, enforcement of road traffic legislations, education on road safety issues, and traffic management in order to contribute towards safer road users.*

The post-crash trauma care and medical fitness to drive under the purview of Ministry of Health and Wellness was excluded. Also, capacity assessments relating to road infrastructure, traffic control infrastructures, technological aspects, logistics and human resources deployed were excluded.

The audit covered the period January 2016 to March 2021, over the Island of Mauritius, and was supplemented with information relating to period prior to January 2016.

1.5 Audit Approach and Methodology

The audit was conducted in accordance with the requirements of the NAO Performance Audit Manual, which is based on International Standards of Supreme Audit Institutions (ISSAI) 3000 Performance Auditing Standard of the International Organisation of Supreme Audit Institutions (INTOSAI). A combination of two approaches was used to determine the nature of the examination to be carried out , and is described as follows:

- a system- oriented approach to examine the proper functioning of the management system at the Ministry in relation to enhancing road safety.

- a result-oriented approach to assess whether outcome or output objectives have been achieved by the Ministry and entities operating under its aegis.

The audit questions were derived from the audit objective, using a 'top-bottom perspective' and a 'Whole-of-Government Approach'. A 'top-bottom' perspective concentrates mainly on the requirements, intentions, objectives and expectations of the legislature and central Government. As per this perspective, the audit focussed on the flow of the high-level strategy approved by Government, down to management of components of the Strategy and then implementation and evaluation. A 'Whole-of-Government Approach' refers to the joint activities performed by diverse Ministries, Public Administrations and Public Agencies to provide a common solution to a particular problem or issue. The problem of no downward trend in road crashes and casualties necessitated the joint activities of several entities in order to provide benefits to several stakeholders, as described in Appendix III.

These benefits comprise:

- Value to Citizen: protection of population from death and serious injuries, financial loss and adverse emotional impacts.

- Value to Implementing Agencies : reduced costs of resources required to address road safety.

- Value to Government: reduced socio-economic costs.

The measurement of effectiveness was based on to what extent the objectives have been met and prevalence of conditions necessary to ensure achievement of these objectives[5].

Different methodologies were used to gather and analyse data, understand the audit area, along with obtaining sufficient, relevant and reliable audit evidence that support the conclusion and recommendations.

1.6 Methods used for gathering and analysing data

Data was gathered mainly from files and documents. This was complemented by interviews, survey and site visits to confirm information in files and to ascertain and assess processes being carried out. Quantitative and qualitative data obtained from interviews, document reviews and during visits were compiled and analysed, to provide competent evidence to support the conclusion and recommendations. These were presented in tables, graphs and charts. Trend analysis was used to identify and interpret the impact of interventions over the examined period. Sampling and benchmarking were also carried out. Content analysis and case studies were extensively used for data analysis.

[5] *Guidance 'GUID 3910 Central Concepts for Performance Auditing, paragraphs 42 and 46'*

1.6.1 Documents reviewed

Information relating to legislations, policies, strategies, structures, methodologies, projects and processes was collected through review of files, documents and databases available at Ministries, Departments, Authorities, District Councils and Vehicle Examination Centres.

1.6.2 Personnel interviewed

Interviews and meetings were carried out with key personnel at senior management levels of the key players involved in road safety management and interventions, namely:

- Senior management at the Ministry, TMRSU, NLTA, RDA, MPS, Ministry of Local Government and Disaster Risk Management.

- Road Safety Coordinator appointed by the Ministry in respect of strategy implementation, action plan and coordination mechanism.

- Officers of the following Ministries, Departments, Councils, private entities at management, supervisory and operational levels:

    i. Mauritius Police Service: Road Safety Unit, Examination Unit, Licensing Unit, Divisional Commander Central and Western Divisions, Police Station Commanders, Police Prosecuting Officers attached to District Courts, Photographic Enforcement Device Unit and Statistics Unit;

    ii. Engineering Staff of the TMRSU involved in traffic planning, signaling, calming and control, maintenance of Road Crash Database and road safety audits;

    iii. NLTA Management and staff of Vehicle Examination Centres involved in road worthiness certification of vehicles;

    iv. Management and engineering staff of RDA in respect of road safety aspects involved in design, construction, maintenance and safety audits of roads under their purview;

    v. Officers of the Planning and Works Department of the Pamplemousses and Rivière du Rempart District Councils involved in traffic clearances for development projects, road safety aspects of roads within their jurisdictions;

    vi. Officers of the Ministry of Finance, Economic Planning and Development (MoFEPD) in respect of investment in road safety;

vii. Mechanical Engineers of the Mechanical Engineering Services of the Ministry of National Infrastructure and Community Development in respect of investigation on potential mechanical defects in vehicles involved in fatal road crashes;

viii. Regional Public Health Superintendent and Medical Staff of SAMU of the Ministry of Health and Wellness (MHW) for post-crash response and treatment and prior medical clearances for issue of driving licenses;

ix. Managers and operating staff of the three privatisd vehicle examination centres;

x. Administrator at the Ministry of Education, Tertiary Education, Science and Technology (METEST) in respect of Road Safety Education;

xi. Statisticians of Statistics Mauritius in respect of data collection for Road Crash Data Management System (RCDMS) and for Targets 3.6 and 11.2 of the SDGs, and

xii. Associate Professor of Department of Statistics, University of Mauritius, in respect of research project "Investigating the causes of fatal accident in Mauritius using discrete time series model" funded by the Mauritius Research and Innovation Council (MRIC).

The interviews and discussions were used to confirm the information obtained from documents reviewed, supplement explanations that were not available in the reviewed documents and explore potential suggestions to bridge the performance gaps identified.

1.6.3 Site Visits

Site visits were carried out at the Traffic Branch , selected Police Divisions, Police Stations, Photographic Enforcement Device Unit, Police Prosecuting Offices, selected District Councils, the three Vehicle Examination Centres, and selected roads and roadsides. These enabled the ascertainment of the processes involved , inspection of the infrastructure, discussion on relevant aspects of management and interventions pertaining to road safety .

1.6.4 Sampling

Purposive sampling was used to focus on specific issues relating to road safety management that would be more appropriate to answer the audit questions. Details on the sampling units selected are described as follows:

- *Enforcement through contravention*s: Out of the seven Police Divisions, Western Division was selected as it was among the Divisions with the highest number of road traffic contraventions established during the period 2016-2019 and the highest

number of outstanding case files of contravention in respect of which enquiries were not completed as of December 2020. Central Division was also chosen for comparison as it was among those with the lowest number of contraventions established and outstanding of contravention case files awaiting inquiries.

- *Conversion of contraventions into convictions*: Out of more than 200 traffic offences, only 11 offences were classified as Cumulative Road Traffic Offences (CRTO) which could lead to disqualification of a driving license. Only nine of these CRTOs were considered by the Strategy as the most common contributory factors of road crashes. The effective conversion of these contraventions into convictions was analysed.

- *Assessment of Road Infrastructure*: Out of the nine districts of Mauritius, Pamplemousses and Rivière du Rempart districts combined had the highest number of fatalities annually during the period 2016-2019. These districts were under the purview of a single engineering section at the TMRSU. These two districts were selected to ascertain the process of maintaining urban/rural roads in relation to road safety.

- *Road Safety Audits*: In 2017, TMRSU and RDA staff were trained by SweRoad Consultants on road safety audits. Reports in respect of road safety audits carried out by TMRSU after 2017 and submitted to RDA were examined, with emphasis on the follow up of the recommendations made.

- *Speed Management* : Much emphasis was laid on speed management in the Strategy to curb the number of road crashes leading to fatalities and severe injuries[6]. As per legislation, a vehicle exceeding 3.5 tons and capable of exceeding a speed of 70 kilometre per hour had to be fitted with a speed limiter to prevent same from exceeding that speed limit. A sample records of 15 vehicles was selected from a list of such type of vehicles intercepted during November -December 2020 by fixed speed cameras for exceeding that speed limit at the Photographic Device Enforcement Unit. Confirmation of whether they were fitted with appropriate speed limiters at time of fitness control were sought from the NLTA to assess whether the speed limiters were working effectively when the vehicles were intercepted by fixed cameras for exceeding the speed limit.

The analysis carried out on these samples are included in the audit findings to support the conclusion.

[6] As per several models, a 1% increase in average speed results in approximately a 2% increase in injury crash frequency, a 3% increase in severe crash frequency, and a 4% increase in fatal crash frequency. https://www.itf-oecd.org/lower-speed-means-fewer-road-deaths

1.7 Assessment Criteria

The main criteria used as a basis for evaluating the evidence collected, developing audit findings, and reaching conclusion on the audit objective and the related audit questions were extracted from road safety management assessment framework as described below.

1.7.1 Road Safety Management Framework

Road safety management is the first and fundamental pillar of the **Decade of Action's Global Plan**. Safety is produced just like other goods and services and the production is viewed as a management system with three levels. This road safety management system model is derived from New Zealand's comprehensive 2010 target setting framework which linked desired results with interventions and related institutional implementation arrangements (Land Transport Safety Authority, 2000). The model presented in Figure 1,adopted globally[7] as a framework to improve road safety performance and comprises the following :

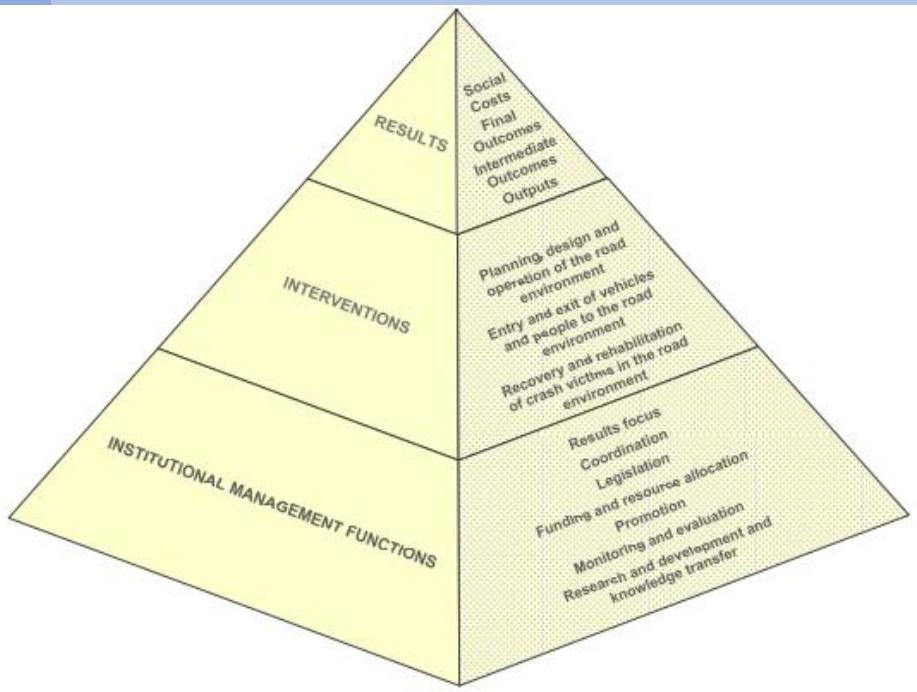
- **Institutional Management Functions:** The Institutional Management Functions are the foundation on which road safety management systems are built. They relate to all Government, civil society and business entities functions that are essential to produce interventions which in turn achieve road safety results.

- **Interventions:** Interventions include broad range of strategies and programmes of interventions to address safety targets. They cover transport and land-use planning for safety, safe road design and operation, safe vehicles, safe road users, and post-crash care. These interventions generally target exposure to the risk of crashes, prevent crashes, and reduce crash injury severity and the consequences of crash injury. Also, they comprise safety designs, standards, and rules as well as a combination of activities to ensure compliance with these.

- **Results:** The final element of the road safety management systems concerns the measurement of the desired results and their expression as targets in terms of final outcomes and outputs. Targets specify the desired safety performance endorsed by all stakeholders.

[7] Recommended by World Bank and OECD and included as reference for Chapter 'Monitoring and Review' of the National Road Safety Strategy for Mauritius 2016-2025.

Figure 1 **The Road Safety Management System**



Source: Bliss, T. and Breen, J. (2008) Implementing the Recommendations of The World Report on Road Traffic Injury Prevention Country guidelines for the conduct of road safety management capacity reviews and the related specification of lead agency reforms, investment strategies and safety programs and projects, Global Road Safety Facility, World Bank, Washington.

This framework was used to examine elements and conditions of the road safety management system and the linkages between them in order to identify current performance levels and objectives achieved.

1.7.2 Ten Strategic Fields of Action of the Strategy

The Strategy defined 10 Strategic Fields of Action which had to be implemented within the timelines attributed to different ministries and departments and a monitoring, evaluation, and review programme to enable Government to achieve the target set. The field of actions were grouped under the Five Pillars (Table 5 refers) and implementation organised in three phases as per the Action Plans. Three Action Plans formulated during period 2016-2021 were used to assess progress as at date.

1.7.3 Additional Criteria

Additional criteria were extracted from the following sources:

i. Relevant Legislations: Road Traffic Act of 1962 and subsequent amendments and regulations, The National Land Transport Authority Act 2019, Roads Act of 1982;

ii. Circulars and Policies of respective Ministries and Departments;

iii. Schemes of Service – Roles and responsibilities of officers;

iv. Guidelines, Practices and Consultancy Reports: '*Technical Guidelines for Vehicle Examination*' of the NLTA, Consultancy Reports '*Review of Road Safety Management Capacity in Mauritius*' by SweRoad in 2013, '*Strengthening Road Safety Audit and Inspections Capacity* 'by SweRoad 2017, and

v. Publications of World Bank, World Health Organisation, Global Road Safety Facility (GRSF), United Nations Economic Commission for Europe (UNECE), Organisation for Economic Cooperation and Development (OECD).

Details on other assessment criteria used are in the relevant paragraphs in the Report.

1.8 Data Validation Process

The Ministry was provided with the audit criteria, findings and recommendations of the report to confirm their relevance, accuracy and suitability.

1.9 Structure of the Report

The remaining part of the Report covers the following:

- Chapter Two describes the audit area, the processes, structures, roles and responsibilities of key players and relevant stakeholders and additional criteria;

- Chapter Three presents the audit findings based on the three specific audit questions grouped under seven focus areas as follows:

i.	*Effectiveness of Institutional Management Functions*
ii.	*Licensing and admission of Safe Users*
iii.	*Effectiveness of Enforcement of road safety legislation*
iv.	*Ensuring only Safe Vehicles are admitted on public roads*
v.	*Promoting Safer Roads and Roadsides*
vi.	*Investing in effective road safety campaigns, sensitisation and education*
vii.	*Focus on results for effectiveness in road safety interventions*

- Chapter Four provides audit conclusion; and

- Chapter Five presents the recommendations based on the audit findings and conclusion.

CHAPTER TWO

DESCRIPTION OF THE AUDIT AREA

This Chapter describes the audit area, the roles and responsibilities of key players involved in enhancing road safety. Key aspects of the different systems relevant in enhancing road safety are also described.

2.1 Introduction

Enhancing Road Safety involves a panoply of interventions that falls under the ambit of several stakeholders. The success of these interventions requires a broad base of support and common actions from all stakeholders. The objectives, roles, responsibilities and commitments of the Ministry, entities operating under its aegis and other public entities directly involved in road safety are highlighted. Key elements of the Strategy and the 'Safe System Approach', aspects related to processes of the fitness control of vehicles, road crash data collection, licensing and enforcement are also described.

2.2 Regulatory Framework

Comprehensive national road safety laws and regulations are effective in reducing injuries and fatalities among all road users. The main laws and regulations relevant to road safety are as follows:

- Road Traffic Act 1962 and its amendments.
- Road Traffic (Construction and use) Regulations 2010 and its amendments.
- Road Traffic (Examination of Motor vehicles and Trailers) Regulations 2016 and its amendments.
- Road Traffic Regulations 1954 and its amendments.
- Road Traffic (Seat Belts) Regulations 2002 and its amendments.
- Road Traffic (Prescribed Devices) Regulations 2010.
- Road Traffic (Speed) Regulations 2011.
- Road Traffic (Use of High Visibility Clothing) (Amendment) Regulations 2013.
- Road Traffic (Driving Schools and instructors) (Amendment) Regulations 2017.
- National Land Transport Authority Act 2019.

- Roads Act of 1982.
- Local Government Act 2011.

The Police Service, NLTA, Road Development Authority and Local Authorities are the enforcement agencies of these legislations, as per their respective mandates.

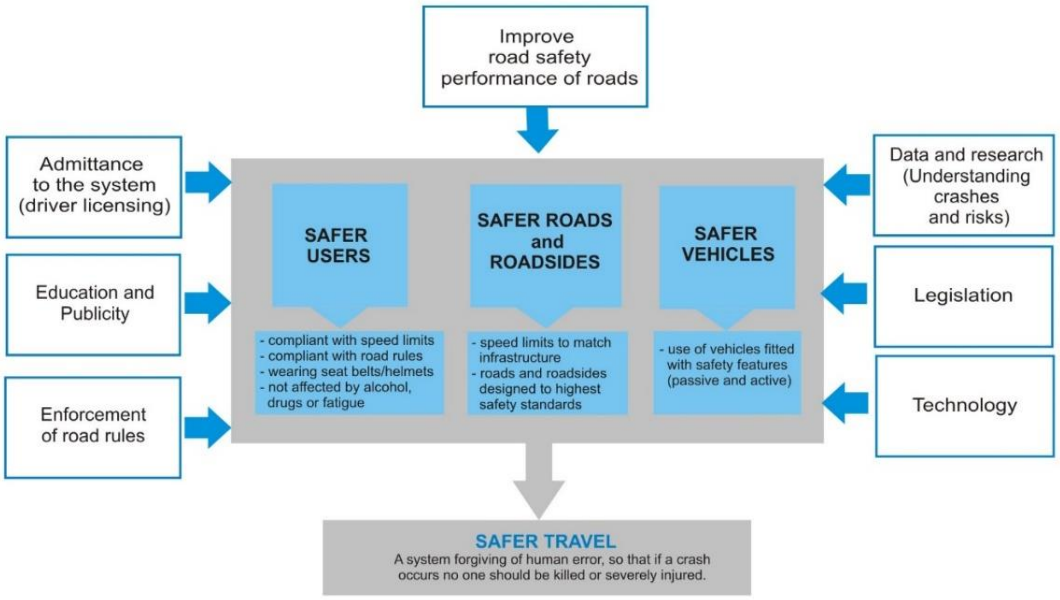
2.3 The National Road Safety Strategy 2016-2025 and the Safe System Approach

The National Road Safety Strategy 2016–2025 represents the commitment of Government to an agreed set of national goals, objectives and action priorities, to achieve a 50 percent reduction in the number of Killed and Seriously Injured crashes by the year 2025.Ten strategic fields of action have been defined, namely: the setting up of a Research and Development Programme; the improvement of Safety Standards of the road infrastructure; the reorganisation of the roadworthiness control of vehicles; the setting up of an effective communication strategy and the strengthening of the Road Traffic Law and Enforcement.

The other strategic fields include the development of new perspectives for delivering Road Safety Education, the re-engineering of the Driving Licensing Scheme, the provision of post-crash trauma care and medical fitness to drive, the reduction of accident costs and funding of the Strategy and the setting up of a Road Safety Academy.

The Strategic Plan is holistic in nature and adopts a coordinated "Safe System Approach" that includes strategies to target road users, vehicles and infrastructure. This "Safe System Approach" is an effective means to bring all stakeholders together by recognising the interdependencies that exist between the elements of the road traffic system. Figure 2 exhibits the Schema of the 'Safe System Approach.'

Figure 2 Schema of the Safe System Approach



Source: National Road Safety Strategy 2016-2025

The 'Safe System Approach' guides the planning, design and management of the operation and use of the road traffic system to provide safety despite human fallibility. It places a shared accountability across all elements of the road traffic system. It shifts a major share of the responsibility from road users to those who design the road transport system such as the road planners and engineers, vehicles construction and use, police, policy makers and legislative bodies. Also, it is based on a long- term vision of how to eliminate serious injuries and it starts from human tolerances to physical impacts during a road crash and accommodates for human error.

To deliver the Strategy, the Ministry has developed the Strategy Action Plan for the period 2017-2018 which has been followed by a second one for the period 2018-2019. These set out priority national actions to be taken an annual basis. The Action Plan has been set into three phases over different periods:

- *Establishment Phase* (*2016-18*)*:* In this phase, the Lead Agency is to be established and the capacity of the Lead Agency is developed to meet road safety challenges. In addition, emphasis is on developing capacity of the key road stakeholders and ensuring focus on results.

- *Growth Phase (2019-21):* In this phase, focus is on the implementation of road safety interventions and the establishment of robust performance monitoring and evaluation procedures. Lessons from the short-term action plan will be used to review the long-term policies and plans.

- *Consolidation Phase (2022-25):* In this phase, focus is on rolling out the road safety programme and actively involving the local authorities. Management and operational efficiencies would be reviewed and the necessary corrective actions taken.

2.4 Roles and Responsibilities of Key Players

The roles and responsibilities of key players are described in the following paragraphs. Appendix IV illustrates the involvement of each stakeholder in road safety management based on its roles, responsibilities and accountability. The responsibilities and interest of other stakeholders are also described.

2.4.1 National Road Safety Commission

In May 2016, a National Road Safety Commission was set up under the aegis of the Prime Minister's Office comprising of key Ministries and Departments with the objective to provide necessary leadership and the high-level monitoring of all the actions being implemented to achieve the ambitious road safety target. The Commission is an important instrument required to achieve strong representation for road safety initiatives.

The National Road Safety Commission is a representation of the commitment taken at the highest level to address the road safety problem in Mauritius. This includes a pledge to cooperate at both policy and operational levels at the Ministries concerned.

The aims of the Commission are as follows:

- to create greater level of awareness, commitment and informed decision making at all levels of the Government.

- to create effective partnerships, horizontally between different sectors of the Government and vertically between different levels of Government as well as non-Governmental organizations.

- to ascertain that the Government provides effective leadership for multi-sectorial coordination and management for road safety activities across the Government.

- to help strengthen institutional capabilities of core road safety sectors dealing in road transport, road infrastructure development, traffic planning, land use planning, health, education, law enforcement and justice.

- to provide clear statements and required outcomes of the National Road Safety Strategy, Actions and agreed targets.

- to put up appropriate legislation within different ministries and supporting laws for the advancement of Road Safety and protection of lives within the road traffic system.

- to advocate road safety in different Ministries and Departments.

2.4.2 National Road Safety Council

The National Road Safety Council was established under Section 178A of the Road Traffic Act. The main functions of the Council are to:

- analyse data on road accidents, identify dangerous spots where accidents frequently occur, and suggest remedial actions.

- appraise and assess the cost effectiveness of road safety measures.

- ensure coordination among the various Government bodies dealing with road safety measures.

- advise the Minister on the introduction of appropriate road safety measures; appropriate methods to promote education of road users and the organisation of road safety campaigns; proper law enforcement methods, introduction of appropriate legislation and the need for amendment of existing legislation with regard to road safety; the condition and maintenance of vehicles and on driver training.

2.4.3 Ministry of Land Transport and Light Rail

The *vision* of the Ministry is to provide a user friendly, modern and sustainable land transport system in a safe and fluid traffic environment. Its *mission* amongst others is to improve road safety through a multi-pronged approach including the legislative framework, engineering, education, sensitisation and enforcement.

The *core function* of the Ministry is to devise and implement policies for land transport operation, traffic management, and road safety. It also acts as a regulator for the public transport industry including oversight on light rail operations, through the National Land Transport Authority, in line with the National Land Transport Authority Act, the Light Rail Act and the Road Traffic Act 1962, as subsequently amended.

The Ministry is supported by the TMRSU and NLTA operating its aegis and the services they provide are described below.

(i) Traffic Management and Road Safety Unit

The Traffic Management and Road Safety Unit (TMRSU) comprises civil engineers, and technicians who are responsible for the following tasks: implementation of traffic calming measures; study, design and implementation of accident remedial schemes; maintenance and updating of accident database; traffic study and analysis; junction control design; and road marking and traffic signing.

It is the main implementing agency of the Strategy and monitors the implementation of Action Plan on behalf of the Ministry.

(ii) National Land Transport Authority

The NLTA was established under the Road Traffic Act 1980 which was subsequently amended in 2019. It comprises a Road Transport Division which is responsible for Land Transport and a Light Rail Division for Light Rail. The main objectives of Road Transport Division include the following:

- to manage, monitor, regulate and oversee land transport.
- to ensure the implementation of Government policies in respect of vehicle registration, licensing, parking control, vehicle examination and road transport services.
- to review the legal framework and procedures relating to vehicle registration, licensing and enforcement.
- to enforce the provisions of the Road Traffic Act and regulations made hereunder for the provision of satisfactory transport services and better compliance with safety requirements on our roads.
- to regulate road worthiness including safety accreditation of motor vehicles and trailers.
- to ensure that the standards of vehicle examination are improved and maintained.
- to ensure that smoke and noise emission standards are complied with for a cleaner environment.
- to computerize records on motor vehicles in order to provide more comprehensive and expeditious services to customers and for better coordination within the department and with other institutions.

2.4.4 Mauritius Police Service

The Mauritius Police Service (MPS) , governed by Police Act 1974 , is the national law enforcement agency for the Republic of Mauritius. The MPS is composed of about 12,500 Police officers who are posted in eight Divisions and Branches. Each Division covers an area in the geographical district of the island and is sub-divided into six to fourteen police station areas. It is headed by a Divisional Commander and alongside the Divisions, there are a number of Branches and Units that provide specialised support and services. Road safety falls under the responsibility of police stations, units and the Traffic Branch.

(i) Traffic Branch

The Traffic Branch is the main branch of the MPS responsible for road safety and is involved in :

- management, processing and issue of driving licences.
- enforcement of traffic legislations.
- education on road safety issues.
- traffic management.

The Traffic Branch comprises about 400 police personnel allocated in the following operational units and sections:

- The Traffic Field and Patrol Division provides policing along the Motorways (M1, M2 and M3), its connected roads and other strategic locations.
- The responsibility of Road Safety Unit is to establish a road safety culture aiming towards safer roads and safer people. It has three units which are as follows:

    i. The Traffic Enforcement Team carries out enforcements of the traffic laws island wide;

    ii. The Road Safety Education Team carries out sensitisation and awareness among the community. The Team also delivers road safety talks in schools and acts as resource person with respect to the practical part of Road Safety Education for Grade 6 students using the movable traffic playground in primary schools in collaboration with TMRSU, and

    iii. The Photographic Enforcement Device Unit is responsible for the management of speed violations captured by fixed speed cameras.

- The Licensing Office handles appointments for tests and licence delivery. Its Traffic Convictions and Management Unit administers offences committed under the Cumulative Road Traffic Offences system while its Disqualification Section manages all issues related to disqualified drivers.

- The Examination Section administers tests for all vehicles at three driving centres across the island.

(*ii) Responsibilities of personnel of Police Stations*

Police stations personnel also carry out traffic laws enforcement duties . They also have the responsibility to record details on all road crashes which have produced casualties (slight injuries, serious injuries, fatalities). For the injury crash database in particular, police officers are required to fill in PF 178 for each casualty crash. The PF 178 records information on the Road conditions: infrastructural/environmental, on vehicle and on driver-related features. The severity of the accident is categorised as : (a) fatal accident, (b) serious injury accident, (c) slight injury accident. The PF 178 are forwarded to TMRSU for input in the road crash database Management system.

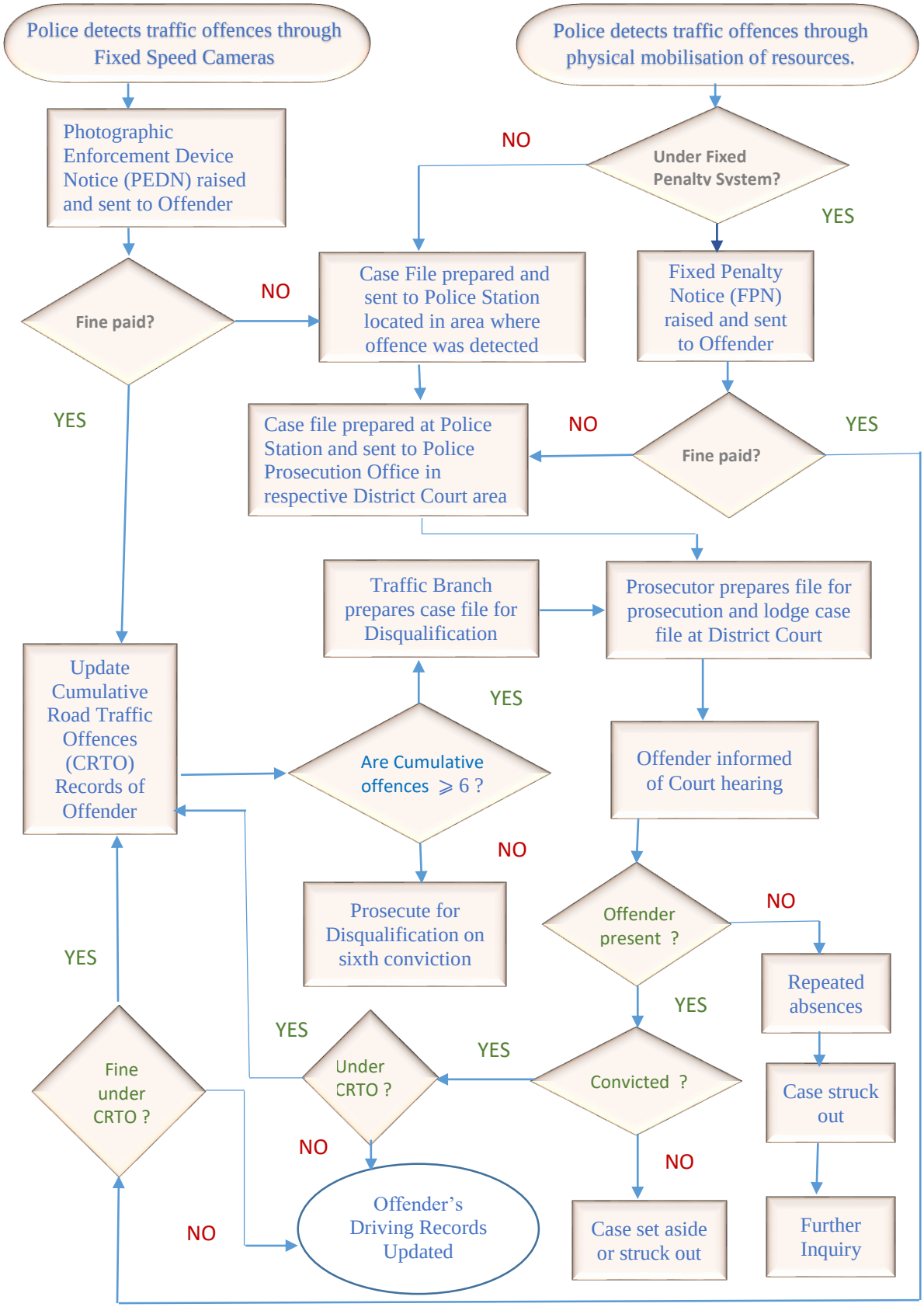
Police personnel are also responsible to investigate all fatal and injury crashes to determine any potential breach of traffic law, identify the offender(s) and prepare case files for prosecution. They collect information on the vehicles and drivers involved, the vehicles' movements prior to the collision, on road users involved and on environmental conditions, such as the weather or road surface.

In respect of road traffic contraventions, police personnel carry out inquiries, complete cases files and submit same to the Prosecution Office of their respective division for prosecution.

(iii) Police Prosecuting Unit

The Police Prosecuting Unit comprises Prosecuting Offices in each Police Division. Each Office , under the responsibility of a Police Inspector, lodges case files at respective District Court in the division . Case files submitted by police stations are examined and ensured complete to enable prosecution. When a case is fixed for hearing before District Court, the Office informs the contravener through post. On the day of the hearing the police inspector acting as Prosecutor, arranges for witness(es) and present the charged party before the Sitting Magistrate. The case is disposed by the Prosecuting Officer as per judgement delivered. In case, the charged party is absent during the hearing, and the case is postponed, the Prosecutor arranges to inform the charged party again in collaboration with personnel of the concerned police station. Set aside and struck out cases are referred back to respective police stations for any necessary actions. Figure 3 illustrates the detection and prosecution process of road traffic offences which are further described in paragraph A.5.1 and C.3.1.4.

Figure 3 **Detection and Prosecution Process of Road Traffic Offences**



Source: National Audit Office Analysis

2.4.5 Road Development Authority

Road Development Authority (RDA) operates under the aegis of the Ministry of National Infrastructure and Community Development (MNICD). One of the missions of the MNICD is to provide a modern, safe and efficient road network system for mobility of people and goods. Aligned to this mission, the RDA must execute the following duties and functions:

- plan, design and supervise the construction of roads, intended to be classified as motorways and main roads.
- carry out or cause to be carried out the upgrading of motorways and main roads and their routine and periodic maintenance.
- maintain existing bridges, tunnels and associated works on motorways and main roads.
- plan, design and supervise the construction and reconstruction of bridges, tunnels and associated works on motorways and main roads.

2.4.6 Ministry of Local Government and Disaster Risk Management

The Ministry of Local Government and Disaster Risk Management (MoLG) is responsible for local Government administration, coordination generally with Municipalities, District Councils and Village Councils. Ensuring road safety along rural and urban roads, is included in the mandate of Local Authorities. Municipal and District Councils must provide and maintain the following services in areas falling under their respective jurisdictions:

- Street lighting;
- Safer urban and rural road infrastructure including traffic calming devices, drains and footpaths, and
- Bus shelters and traffic centres which have an impact positively on road safety.

2.4.7 Ministry of Health and Wellness

The Ministry of Health and Wellness provides post-accident trauma care to victims of road crashes, hospital care as inpatients and as outpatients. The SAMU is the primary post-accident care service provider with support from the Mauritius Fire and Rescue Services and Police Service.

2.4.8 Ministry of Education, Tertiary Education, Science and Technology

The Ministry of Education, Tertiary Education, Science and Technology (METEST) as a major stakeholder has been assigned the role and responsibility to promote effective road safety education in schools and assist in the lifelong education of road users. The aim is to initiate pupils to road safety issues and road signs and to make them more responsible on the roads as pedestrians and future drivers. In this area, METEST collaborates with the Police and TMRSU. The main contributions of METEST in respect of the Strategy are:

- Recruitment of primary holistic educators for the teaching of road safety.
- Development road safety education curriculum for primary schools.
- Introduction a time slot for road safety education for each respective age group within the primary education program.

2.5 Funding the implementation of the Strategy

The cost for the implementation of the Strategy over the ten-year period was estimated at Rs 4,792 million. Through its endorsement by the National Road Safety Commission, a high-level engagement had been taken to ensure availability of funds for road safety which has been phased as described in Table 7.

Table 7	**Funding Requirements for implementation of Strategy**			
	Establishment Phase 2016-18 (Rs million)	**Growth Phase 2019-21** (Rs million)	**Consolidation Phase 2022-25** (Rs million)	**Total** (Rs million)
Pillar 1- Road Safety Management	50	125	35	210
Pillar 2-Safer Road Infrastructure	1,325	1,105	1,210	3,640
Pillar 3-Safer Vehicles	14	5	8	27
Pillar 4- Safe Road Users	240	255	325	820
Pillar 5- Post Crash response	50	20	25	95
Total	1,679	1,510	1,603	4,792

Source: National Road Safety Strategy 2016-2025

Funds to implement the Strategy was included in the capital and recurrent budgets of the TMRSU. Over the last five financial years ended 30 June 2020, some Rs 1.4 billion were spent on TMRSU (Table 6 refers). This included some Rs 775 million spent on the implementation of the Strategy. It excluded expenditures on Road Safety related activities in other departments like the Police Service, NLTA and RDA.

2.6 Road Infrastructures

Road infrastructures play an important role in road safety. Details of road infrastructures in Mauritius are briefly described in subsequent paragraphs.

2.6.1 Public Roads

There are 2,772 kilometres of roads in Mauritius, of which 1,140 km (41 percent) are main roads, 913 km (33 percent) are secondary roads, 104 km (4 percent) are motorways and the remaining 615 km (22 percent) are made up of other types of roads. Roads are classified as 'M', 'A', 'B' and 'U/R' (Urban/Rural), depending on importance, traffic volumes carried and road widths.

Details of road under the responsibility of the RDA are as follows:

- Motorway M1 is a dual carriageway which starts in Capital City Port Louis and ends at SSR International Airport and is about 43 km in length.

- Motorway M2 is a dual carriageway which starts in Port Louis and ends in Grand Baie and is about 23 km long.

- Motorway M3 is a dual carriageway which bypasses the city of Port Louis and connects the north to the south of the island, with an approximate length of 23 km.

- Classified A Roads start mostly at Port Louis or branches from other M or A roads starting in Port Louis to all parts of the island. Classified B Roads mostly branch from A roads and serve accesses to villages in all parts of the island.

Urban/Rural (U/R) Roads are smaller roads which serve as accesses to smaller localities and individual houses and under the responsibilities of Local Authorities.

2.6.2 Road Classification

Road Classification is the responsibility of RDA whilst setting of Speed limit is the responsibility of TRMSU. All roads leading to Port Louis have been classified as 'A' roads which have a speed limit of 80 -110 km/hrs. 'B' roads have a speed limit of 60 km/hrs.

2.6.3 Road Markings and Road Signs

TMRSU is responsible for the management of road signs and road markings. Traffic signs and Road markings are initially provided by TMRSU. The responsibility to maintain those along classified roads are that of the RDA and Local Authorities maintain rural and urban roads.

2.7 Safer Vehicles

Safe vehicles play an important role in enhancing road safety. The vehicles on public roads and the key process at vehicle examination centres are described in paragraphs 2.7.1 and 2.7.2

2.7.1 Vehicles on public roads

As of December 2020, there were some 600,000 vehicles registered in Mauritius out of which some 590,000 circulate on our roads. Nearly 28 percent of the car fleet[8] in Mauritius are more than 10 years old.

The fleet consisted mostly of some 320,000 (53 percent) cars, double cab pickup and dual-purpose vehicles and some 222,000 (37 percent) motorised two-wheelers. The remaining comprised vans, lorries, trucks, buses, and other vehicles.

2.7.2 Vehicle Examination Centres

Vehicles were previously examined by NLTA at its different examination centres. As from 2016, vehicle examination activity was privatised and regulated under the Road Traffic (Amendment) Act 2016 and the Road Traffic (Examination of Motor Vehicles and Trailers) Regulations 2016.

Currently three private entities are undertaking vehicle examinations. The examination of motor vehicles and trailers is carried out both visually and with automated testing equipment in accordance with the technical guidelines issued by NLTA. The requirement for automated testing equipment for the various types of examinations was specified in the 'Expression of Interest' launched in 2011. The technical guideline specifies the inspection process to be followed and the requirements that vehicles must satisfy in order to be issued with a Certificate of Fitness. The Certificate of Fitness is issued to the owner if the motor vehicle or trailer complies with such requirements as to design, construction, equipment, safety standards and vehicle emission. A Certificate of fitness is not issued in case defects are found. The owner is issued with a defect list/ examination report for re-examination within three days after repairs. If the defect is remedied after re-examination and the vehicle found roadworthy, the owner is then issued the Certificate of Fitness.

2.8 Road crash data collection and management system

Police accident records constitute the primary source of information on road crash data, for which Police is responsible . Data collected is recorded manually at local police stations levels on Road Accident data forms (PF 178, PF 179 and PF 70). The purpose of each of

[8] Cars, dual purpose vehicles and double cab pickup

the different Police Forms are described in Table 8.

Table 8: Road Accident data forms used by Police to record accident data

Data Forms	Purpose
PF 178	It is used for crashes involving casualties - to register accident circumstances, data on vehicles and drivers/riders, infrastructural/environmental road conditions. The severity of accident categorized as fatal, serious injury and slight injury accident.
PF 179	It is used for crashes without casualties. If drivers disagree and the Agreed Statement of Facts (ASOF) does not apply, the police become involved and the form PF 179 is used to register accident circumstances, driver data etc.
PF 70	It is used to record information about vehicle involved in the accident. PF 70 contains information which are not included in PF 178 such as whether the vehicle is a second hand, first hand or a repaired car and also about the latest fitness test passed by the vehicle.

Source: Adapted from MRIC Report

The duly filled in PF 178 are despatched to the Traffic Branch and forwarded to TMRSU. The latter inputs the data into the iMAAP to populate the injury road crash database.

CHAPTER THREE

FINDINGS

This Chapter presents the audit findings on whether the Ministry was effective in enhancing road safety through its management functions. It includes findings related to entities under its aegis and other stakeholders whose interventions are directly related to road safety.

3.1 General

The Ministry, as the apex Government entity responsible for road safety management, has adopted the globally accepted best-practice approach to prevent road crash and severity of casualties. This approach consists of a system of 'Pillars' of the Safe System Approach, that works together to prevent and potentially eliminate death and serious injury.

In its move to attain the long-term target of the Strategy, the Ministry is expected to be continuously focussed on its mandate of enhancing road safety. Through its management functions, it needs to gather information on progress against each of these pillars, analyse deficiencies and opportunities, plan and implement appropriate responses with support of all stakeholders. In parallel, it needs to set targets for improvement, monitor progress towards these targets, develop advocacy and commitment to the interventions which work among all the stakeholders.

Measures to enhance road safety require consumption of resources in each of the related interventions. Some interventions require capital intensive investments, while others do not. Table 9 shows potential benefit cost ratios identified in different measures undertaken in interventions.

Table 9 **Benefit Cost Ratio of Various Road Safety Interventions**

Type of Measure	*Benefit Cost Ratio*
Road Safety audits and inspections	1.34 – 242
Vehicle design and personal safety equipment	0 – 31.7
Increasing traffic police enforcement	1.0 – 27
Traffic control, including new speed limits	0.5 – 10
Vehicle and garage inspections	1.9 – 7.2
Improving road design and roadside equipment	0.1 – 5.7
Road maintenance	0.7 – 2.87
Driver training, public information and education campaigns	> 0 – 1.1

Source: Elvik, R. (2000), How Much Do Road Accidents Cost the National Economy? Accident Analysis & Prevention, Open Journal of Civil Engineering, Vol. 6 No.2.

Road safety policy analysis carried out in several countries showed that major improvements in road safety can be accomplished by implementing cost-effective safety measures.

The findings covered seven focus areas which form part of the 'Pillars' of the Safe System Approach and which include cost effective aspects mentioned above. These seven focus areas which relate to audit questions and sub questions are organised in Section A to G as follows:

Sections	Audit Questions/ Sub-questions	Focus Areas
A	Audit Question 1- *inclusive of Sub-questions 1 to 7*	Effectiveness of Institutional Management Functions
B	Audit Question 2 *Sub-question 1*	Licensing and Admission of Safe Users
C	Audit Question 2 *Sub-question 2*	Effectiveness of Enforcement of road safety legislation
D	Audit Question 2 *Sub-question 3*	Ensuring only Safe Vehicles are admitted on public roads
E	Audit Question 2 *Sub-question 4*	Promoting Safer Roads and Roadsides
F	Audit Question 2 *Sub-question 5*	Investing in effective road safety campaigns, education and sensitisation
G	Audit Question 3 *Sub-questions 1 to 2*	Focus on results for effectiveness in road safety interventions

SECTION A

Effectiveness of Institutional Management Functions

Key findings

- *Major challenges identified in the Road Safety Management Capacity Review were still outstanding as of March 2021 which impacted negatively on enhancing road safety.*
- *A Lead Agency is an important entity which owns the management function of driving forward the national road safety strategy. The Council which was appointed as Lead Agency pending the designation of one, did not deliver the expected results as it was not adequately empowered.*
- *There were significant challenges in keeping focus on results, and addressing issues related to coordination among the stakeholders, funding of interventions, effectiveness of legislation, monitoring, evaluation, research and sharing of knowledge.*

A.1 Introduction

Institutional Management Functions constitute the essential aspects of a road safety management system for a country and provide direction on how cost-effective interventions are identified, prioritised, scoped, funded, targeted and delivered. They are the foundation on which road safety management systems are built. They relate to all Government, civil society and business entities functions that are essential to produce interventions which in turn achieve road safety results[9]. They also assist in building support for sustained road safety improvement and creating the human, financial and institutional capacity needed to support, and transform it into improved safety results within the community.

One of the findings identified in the Road Safety Management Capacity Review of 2013 was that the capacity of road safety agencies in road safety management was weak. In respect of all the management roles and functions examined, the expected roles and functions were either not in place, pending or partial (Appendix V refers). In order to provide appropriate leadership for the development, coordination and monitoring of road safety results, the strengthening of these management roles and functions was recommended. This required capacity development to cover result focus, multi-sectorial coordination of the Strategy, preparing proposals for legislation, funding and resource allocation, high-level promotion, monitoring and evaluation, and research and knowledge transfer.

[9] 'Managing Road Safety in Africa – A Framework for National Lead Agencies' SSATP, © June 2014 The International Bank for Reconstruction and Development / The World Bank Group.

The implementation of the Strategy as from 2016 initiated the Safe System Approach to address road safety. The status on the Action Plan of the Strategy, as of March 2021, is as per Appendix VI. Progress was realised in each of the five pillars. However, progress on Pillar 1 'Road Safety Management' did not include adequate strengthening aspects of the management functions and roles, as recommended in 2013, to enhance road safety.

This Section examines the aspects of different components of Institutional Management Functions necessary to enhance road safety and is organised as follows:

Section	Components
A.2	Setting up of a Lead Agency to strengthen Institutional Management Functions
A.3	Result focus management functions
A.4	Coordination among different stakeholders
A.5	Adequate legislation to meet requirements of the Strategy
A.6	Adequate and sustainable road safety funding mechanism
A.7	Appropriate monitoring and evaluation of interventions
A.8	Adequate research and development, and knowledge transfer

A.2 Setting up of a Lead Agency to strengthen Institutional Management Functions

In 2013 the responsibility for road safety at national level was within the purview of the Land Transport & Shipping Division under the aegis of the Ministry of Public Infrastructure, National Development Unit, Land Transport and Shipping (MPINDULT&S). The Council was reporting to the then Minister of MPINDULT&S and was responsible for the coordination among various road safety partners and sectors. During the capacity review of 2013, the Consultants identified that the Council lacked both the resources and capacity to undertake this role. The meetings held by the Council were found to be useful discussion forums rather than linked to effective decision-making. Overall, the performance of the Council in coordinating road safety efforts was assessed to be ineffective, with no follow up actions. Besides, there was no framework for review of road safety performance.

A.2.1 Importance of Lead Agency

The setting up of a high-level Lead Agency was recommended by the Consultants to address some of the key challenges encountered in the Institutional Management Functions. Road safety management requires multi-sectorial decision-making and calls for a Lead Agency on a 'first amongst equals' basis. Under this basis, different ministries and departments related to road safety, have their own responsibilities for road safety. But the role of strategy development, orchestrating and monitoring coordinated effort to deliver road safety results belongs to an appropriately empowered Lead Agency.

A.2.2 Implementation of the Strategy and setting up of a Lead Agency

In December 2015, a Land Transport Division was created under the aegis of the then Ministry of Public Infrastructure and Land Transport (MPILT). The mission of the Land Transport Division was to formulate and implement policies for safe, efficient and environmentally sustainable services in the land transport sector. The TMRSU and the then NTA were operating under the aegis of the Land Transport Division.

The Strategy was launched in May 2016 by the MPILT. In the Strategy document, the setting up of a Lead Agency was not explicitly recommended, but its importance was acknowledged. The Council was expected to meet every month to ensure appropriate implementation of the Strategy[10].

In January 2016, the Council was assigned the role of the Lead Agency, pending the setting up of same. The Lead Agency when set up, would be appropriately empowered to promote more collaboration from counterpart ministries for ensuring smooth and timely implementation and coordination of the safety strategies. In August 2017, during a meeting of the Council it was evoked that TMRSU may act as Lead Agency for implementation, coordination and monitoring of interventions in all sectors as it was already endowed with the appropriate staff.

Then, following the creation of the Ministry of Land Transport and Light Rail in November 2019, the Division was subsumed into this Ministry. The TMRSU and NLTA also followed suit by operating under the aegis of the Ministry. The core function of the Ministry is to devise and implement policies for land transport operation, traffic management and road safety.

A.2.3 Status on Lead Agency

As of March 2021, no single entity was empowered and was discharging effectively the role of a Lead Agency to drive the Strategy forward. The powers, competencies, roles and functions of a Lead Agency were distributed among several entities. The Council was having advisory and coordination roles as per its legal mandate. The meetings were discussion forums, with focus on coordination, collaboration and consensus on road safety matters. The last meeting of the Council was held in October 2020 and since then there had not been any alternative arrangements for coordination among the different stakeholders, except for the sectoral meetings comprising the Ministry, TMRSU, Police Service and NLTA.

The TMRSU, possessing the engineering and technical competencies, was the main

[10] As per Report of the National Road Safety Commission of 18 May 2016

implementing body of the Strategy[11]. However, it was not empowered with any legislative, funding or policy functions. These functions rather fell within the ambit of the Ministry.

Though the Ministry was accountable for road safety at national level, several associated roles and functions necessary for management and interventions, such as enforcement of traffic laws, were outside its control.

A.2.4 Impact on management functions, interventions and results

The Council comprising representatives from key stakeholders was functioning as a Coordinating Committee. According to good practices[12], this is typically a weak accountability mechanism. It is more likely to generate uneven levels of response from different stakeholders and allow them to frame issues in ways that reflect what they regard as important. It is a simple and quick way to initiate, yet difficult to keep alive for lack of ownership and to achieve results, therefore only useful as a first step.

A.3 *Result focus management functions*

As per good practices, an effective strategy is likely to be supported by two key elements[13]:

- A Results Management Framework, which includes ambitious and achievable targets along with intermediate indicators that will be more precisely tracked over time.

- A funded Multi-Agency Action Plan to implement strategy, focused on evidence-based interventions necessary to positively impact on the intermediate outcomes being sought.

These two elements were mentioned in the Strategy document and their implementation were recommended. In April 2018, the TMRSU made a presentation to the Council on the importance of intermediate outcome indicators and process implementation indicators and the need to develop and implement same. The intermediate outcome indicators included the following: percentage of motorcyclists wearing high visibility clothing, number of deaths from crashes involving drivers/riders with blood alcohol concentration above the legal limit, and number of deaths involving unlicensed drivers/riders. The key process implementation indicators are as follows:

[11] As per official website of the Ministry of Land Transport and Light Rail

[12] 'Managing Road Safety in Africa – A Framework for National Lead Agencies' SSATP, © June 2014 The International Bank for Reconstruction and Development / The World Bank Group.

[13] Ibid.

- Number of public awareness campaigns effected per year with focus on speed, seatbelt use and drunk/drug-driving and distracted driving behaviour.

- Number of drivers disqualified, fined or sentenced.

- Number of road safety audits for new and existing roads, number of accident black spots treated and number of kilometres of roadside hazard treated.

- Number of hours allocated on Road Safety Education.

These intermediate and outcome indicators when included in a result framework allow progress to be more precisely tracked over time and provide focus on results. No framework has been established, since then, alongside the Action Plan to achieve a 50 percent reduction in Killed and Seriously Injured by 2025. As of March 2021, road crashes were still being mainly monitored through mortality and injury rates instead of result framework and evidence-based interventions.

A.4 *Coordination among different stakeholders*

The Council carried out coordination among the different stakeholders but lacked the legal authority to address issues when such collaboration from different stakeholders were not to the level required for timely implementation and coordination of the safety strategies. In several cases, as described below, more effective coordination and follow up were required:

- There were recurrent delays in submission or non-submission of PF 178, by the Police Service, during the past three years to the TMRSU. This affected negatively the newly installed National Road Crash Data Management System costing some Rs 11.5 million.

- Data was not compiled by the Police Service in respect of road accidents and submitted to Statistics Mauritius. This affected the compilation of statistics and analysis necessary to assess road safety status during 2019-2020.

- There were differences in approaches between the TMRSU and the RDA regarding road safety audits , with a high impact on road safety, which remained unresolved as of March 2021.

After the last Council meeting of October 2020, there was no alternative platform for all the relevant stakeholders to meet and discuss road safety issues. Only Sectoral Meetings were held among the Ministry, TMRSU, NLTA and Police Service. On issues requiring the collaboration of other stakeholders including Local Authorities and RDA, their collaboration was expected to be secured through letters addressed to them.

Road safety management requires a whole-of-Government approach to provide a common

solution through discussion, collaboration and support. Two examples are illustrated below where more support and inquiry were required to address road safety issues.

Example 1- Support to Local Authorities

During the Sectoral Meeting of February 2021, it was reported that maintenance of road markings was not being carried out by the Local Authorities and a letter had to be sent to the latter. During site visits management of two Local Authorities (Pamplemousses and Rivière du Rempart District Councils) reported several constraints and challenges in maintaining the rural roads under their purview, some of which are described below:

- Each District Council had only two painters to maintain some 500 kilometres of rural roads. The paints were purchased from local hardware shops and when applied on the roads, the painted surfaces did not last long.

- At the two District Councils, traffic signs purchased from suppliers and installed differed from those used by TMRSU. Specifications were not provided by TMRSU, and the traffic signs were of lower quality than those procured and installed by TMRSU.

- Personnel of the two District Councils reported that they had not received relevant training in respect of road safety and were not adequately versed with expected delivery under the Safe System Approach.

In their 2017 Report, SweRoad Consultants identified that the traffic signing across Mauritius was poor. Most upright signs were too small, badly designed and made of poor-quality materials. The reason for this included lack of a modern traffic sign system, lack of technical guidance and capacity and good traffic sign specifications. In 2020, TMRSU developed an elaborated specification for traffic signs, but same was not yet communicated to the Local Authorities.

Example 2- Maintenance of roads by RDA

During the same meeting in February 2021, it was reported that RDA was not maintaining any road. TMRSU was thus requested to send an official letter to the RDA to draw attention on the aspects of road safety. Given the urgency and high incidence of non-maintained road on road crashes, discussion through meetings would have been more appropriate to secure closer collaboration.

A.5 Adequate legislation to meet requirements of the Strategy

It is important to ensure the effectiveness of existing laws and regulations by analysing their compliance and enforcement and making the necessary improvements. The main legislations and related regulations have been updated as and when the needs were

identified by the Ministry for such amendments. The following paragraphs examine aspects of certain amendments and whether they were accompanied with appropriate procedures and reviews to support interventions with focus on results.

A.5.1 Cumulative Road Traffic Offences

In July 2015, the Road Traffic Act was amended to introduce the Cumulative Road Traffic Offences (CRTO). The CRTO replaced the Penalty Points System as a new sanctioning mechanism for specific serious driving offences. It also provided for the disqualification of a person who had been convicted for more than five specified serious driving offences and the cancellation of the driving licence of a person who has been disqualified a second time. The Court was empowered to suspend the driving licence of any person convicted on a sixth occasion, within a period of 24 months of one or more serious road offences and to disqualify that person from driving or obtaining a driving licence for a period of 6 to 12 months. In case of disqualification, the Court could order road traffic offenders to follow rehabilitation courses. The Rehabilitation Program aimed at helping chronic road offenders to be more aware of their driving behaviour through education, with a view to motivating them to change their attitudes.

There were loopholes in the legislation and administration of the CRTOs which either enabled the offenders to avoid being caught for related offences, or when caught avoid prosecution and disqualification. As of December 2020, the number of persons convicted for CRTOs were as Table 10.

Table 10	**Number of persons convicted for respective number of CRTOs**						
Number of CRTOs	**1**	**2**	**3**	**4**	**5**	**6**	**Total**
Persons convicted	88,761	24,278	8,015	3,029	1,196	469	125,748

Source: Police Service Records

Out of the 469 cases sent for application to Court for disqualification, in 96 cases the offenders were disqualified from driving. There were 310 cases pending enquiry or Court proceedings. The remaining 63 cases were either struck out or dismissed. During site visits at the Police Prosecution Offices and Police Stations and confirmation through examination of records, the reasons associated with the struck out or set aside cases were identified as follows:

- The offenders did not attend Court repeatedly during the hearings, and the cases were struck out.

- There was missing information in the case files, or legal points raised by the offenders' counsels or the Director of Public Prosecution advised that prosecution be discontinued on legal grounds.

One of the common ways offenders avoided prosecution for offences under the CRTO was

to discard receipts of the PEDN and in other cases their addresses were incorrect, or they could not be traced (paragraph 3.1.2 of Section C refers) . When the fines remained unpaid under the PEDN or FPN, case files were prepared, and enquiries were started to initiate prosecution. That procedure might take several years before Court proceedings. During the Court hearings they might not appear in Court and such cases were usually struck out. Even if they appear in Court and are convicted for the offences, that might not be cumulated in their list of CRTOs. An offence is cumulated in the list of CRTOs not when the offence is detected, but when the fine is paid or the offender is convicted before a Court. The detection, prosecution and conviction processes were usually lengthy. Convictions before Courts might fall outside the 24 months period since the offences were detected.

There were cases of offenders, in respect of whom repeated offences were detected within a 24-month period, but they did not pay in fines for each of the PEDN. (Table 11 refers) These offences would be added to their lists of CRTOs only when they are convicted before Court. For example, in the case of 'Vehicle E', if there are convictions through Court during 2022, none of the eight offences will be cumulated even if the offences were committed within a 24-month period. In case of 'Vehicle H', none of the four offences detected in 2018 will be considered if conviction is established through Court in 2021.

Table 11	**Number of speeding offences under the CRTOs detected within a 24-month period for a sample of vehicles during 2018-2020.**		
Vehicle[14]	**2018**	**2019**	**2020**
A	-	4	4
B	4	1	1
C	-	8	-
D	-	8	1
E	-	8	-
F	-	-	5
G	-	3	4
H	4	2	1

Source: NAO Analysis

Since the enactment of the CRTO in 2015, the Ministry did not assess whether it was being implemented appropriately to deliver the expected results and the need for any adjustment to enhance its efficiency and effectiveness.

A.5.2 Impact of the increase in fines for speeding

A fixed graduated scale of fines to be paid by persons convicted of exceeding speed limits was introduced in 2015, concurrently with the CRTOs. The speed limits on the various types of roads were streamlined and simplified.

[14] The registration numbers are not being disclosed, details are available at the Photographic Enforcement Device Unit.

A minimum fine of Rs 1000 for exceeding the speed limit by not more than 15 kilometres (SPED 04) , a fine of Rs 1500 for exceeding the speed limit by more than 15 but not more than 25 kilometres per hour (SPED 05) and a fine of Rs 2500 for driving at a speed of more than 25 kilometres, above the authorised speed limit (SPED 06) were imposed. In October 2018, all the fines were at least doubled.

The impact on the average monthly speeding offences detected by the PEDU was compared with that before the increase and details are as per Table 12.

Table 12 Average monthly speeding offences established before and after increase in fines

Offence	SPED 04	SPED 05	SPED 06
Fine (period July 2015- September 2018) - Rs	1,000	1,500	2,500
Average monthly contraventions established	1689	948	144
Fine (October 2018- June 2020) – Rs	2,500	5,000	10,000
Average monthly contraventions established	1601	778	131
Decrease in average monthly contraventions	88	170	13
Percentage decrease	5	18	9

Source: NAO Analysis

The data of the PEDU only were used as data on contraventions established by handheld devices through covert actions, were not available. Though contraventions established by fixed cameras whose locations were known and advance warnings were in place and the fines were increased at least threefold, the decrease in the number of contraventions established was in the range of 5 to 18 percent. The proportional decrease of the speeding offences was low when compared to the 150 to 300 percent increase in fines. The impact of increasing the fine is further mitigated by the non-payment of same and subsequent struck out of case files during prosecution.

The Ministry did not assess the impact of increasing fines on speeding offences with a view to confirm whether this course of action was the best option to address speeding offences.

A.5.3 Fixed Penalty System

The Fixed Penalty System (FPS) provides for fixed amounts of fines and shorter time frame for payment. If appropriately complied with, the system was expected to decrease administrative costs of handling offences, increase efficiency in handling contravention cases and ensure swiftness of prosecution process. The timeliness of the sanctions would result in an effective deterrent against those who violate traffic laws.

As of January 2021, there were 204 types of offences under the FPS and the Ministry announced the increase of fines of 13 road traffic offences falling under the FPS. Section

C describes how non-payment of fines impacted on the efficiency and effectiveness of the FPS. For example, in respect of unpaid fines for offences established by fixed cameras (under the regime of the FPS) , the proportion of unpaid fines has been increasing since 2016 to reach some 44 percent in 2019. Unpaid fines had to be addressed through case files, prosecution and Court hearing. This was a lengthy process and contributed to increasing the backlog of contravention cases, including those not under the FPS regime.

For the period examined (January 2016 to March 2021), the Ministry did not assess the FPS to identify what were the challenges and constraints that decreased its efficiency and effectiveness. A proper assessment would have enabled the Ministry to take appropriate corrective action.

A.6 Adequate and sustainable road safety funding mechanism

The implementation of road safety activities requires effective mobilisation of financial resources. The road safety management capacity review of 2013 identified several challenges in respect of road safety funding and resource allocation. Donor support in terms of direct financial and technical assistance for road safety was insignificant. Most stakeholders reported that road safety works were compromised due to unavailability of finance and expert resources in the field. Also, there was no mechanism in place to engage insurance industry to support road safety activities.

Since then, the challenges identified were not addressed effectively as all road safety interventions were financed from the Consolidated Fund. Sufficient funds were not available to finance several road safety related projects which were considered important by the Ministry. Some examples are as follows:

- *Training Course of Vehicle examiners still in abeyance* - In 2019, the Ministry envisaged to provide training to 15 vehicle examiners of the NLTA and initiated the preparation of the draft regulations regarding the training course. As of March 2021,the training course had been put on hold due to lack of funds.

- *Road safety awareness campaigns* – there were no funds available in the financial year 2020-2021 for a seat belt campaign estimated at some Rs 3.4 million. The campaign has been kept in abeyance.

Internationally the number of evidence-based effective road safety interventions is increasing , with new information being added on a regular basis. Several interventions are known to be highly effective at reducing fatal and serious crash outcomes when implemented correctly[15], while others, previously considered as highly effective are, in

[15] "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."

light of new evidence, no longer considered to be so. As of March 2021, mid-way through the implementation of the Strategy, there was no plan prepared to identify what would be the priorities in the short to medium term and the associated funding that would be required. Moreover, no mid-term evaluation was carried out to assess whether what was considered priorities in 2016 still ranked high and warranted funding.

A.7 Appropriate monitoring and evaluation of interventions

The compilation of regular road safety progress report (at least once a year) is an essential means to assess progress and determine whether adjustments are needed[16]. Interventions should include a formal evaluation component. It helps to build a level of road safety understanding at national level, focussing on intermediate outcomes and delivery of interventions which are based on evidence.

The Strategy recommended a results-based management system for proper monitoring and evaluation of road safety interventions. This included:

- Review of the national road safety strategic plan based on its periodic performance of results achieved, programs and Institutional Management Functions.

- Making required adjustments to programmes and institutional outputs needed to achieve the desired results.

As of March 2021, no periodic monitoring and evaluation exercise was being carried out except for ad-hoc 'bilans 'on the Strategy which were presented to the Council.

A.8 Adequate research and development and knowledge transfer

One of the weaknesses of the road safety management system was that there was no comprehensive processed road data to determine the malfunctioning of the road network system. There were quantitative and useful data in respect of fleet of vehicles and accidents, but insufficient information to understand how accidents occur. The lack of comprehensive data was adversely impacting on the formulation and implementation of appropriate measures to enhance road safety. A Research and Development Programme (R&DP) was proposed under the Strategy, which would address collection of data on road accidents, analyse same and come up with policies for redress. The policies for redress could either be legal, improving road infrastructure, enforcement by police or techniques of driving.

In the R&DP, the setting up of a National Road Safety Observatory (NRSO) was advocated.

[16] 'Managing Road Safety in Africa – A Framework for National Lead Agencies' SSATP, © June 2014 The International Bank for Reconstruction and Development / The World Bank Group.

The objective was to facilitate the availability of realistic road crash data and analysis to support interventions towards reducing Killed and Seriously Injured. The NRSO had several roles which included the following:

- lead research into road safety issues.
- coordinate, monitor and report data.
- serve as a centre of excellence and a hub for practical advice.

Included in the R&DP was the setup of a Road Crash Research Laboratory and Road Crash Investigation Teams. Some Rs 40 million were expected to be spent during financial years ended June 2017 and 2018 for the setting up of the observatory, laboratory and for the constitution of four road crash investigation teams.

The initiatives to enhance the availability of data, analysis and transfer of knowledge are examined in the paragraphs below.

A.8.1 Availability of data for research and road crash investigation

In March 2020, a Memorandum of Understanding (MOU) was signed with the University of Mauritius (UOM), for the setting up of a NRSO. Research on four road safety topics had to be carried out by UOM , for an agreed sum of Rs 1.9 million by July 2021. Research on the four topics required availability of adequate data. However, for the period 2017-2019 , adequate data could not be provided as significant number of PF 178 for the period were not submitted. Further, the PF 178 did not capture equally important data for analysis and decision making (paragraph E.2.2 of Section E refers).

Following the training of 30 Road Crash Investigators in 2017, four Road Crash Investigation Teams (RCIT) were set up in September 2018 to investigate selected road crashes, determine their causes, and submit findings and recommendations. Some 25 road crashes were expected to be investigated annually. Four crash investigation reports were produced and two were submitted to the Council by January 2019. In the reports, the main causes of crashes were attributed to unsafe behaviour of road users, inadequate road safety features on roads and roadsides and footbridges. Some remedial measures were undertaken on the recommendations, while in the other cases no adequate follow up was reported. For example, in the case a fatal road accident in 2017 at Bois Marchand, recommendations formulated in the crash investigation report was not adequately followed up.

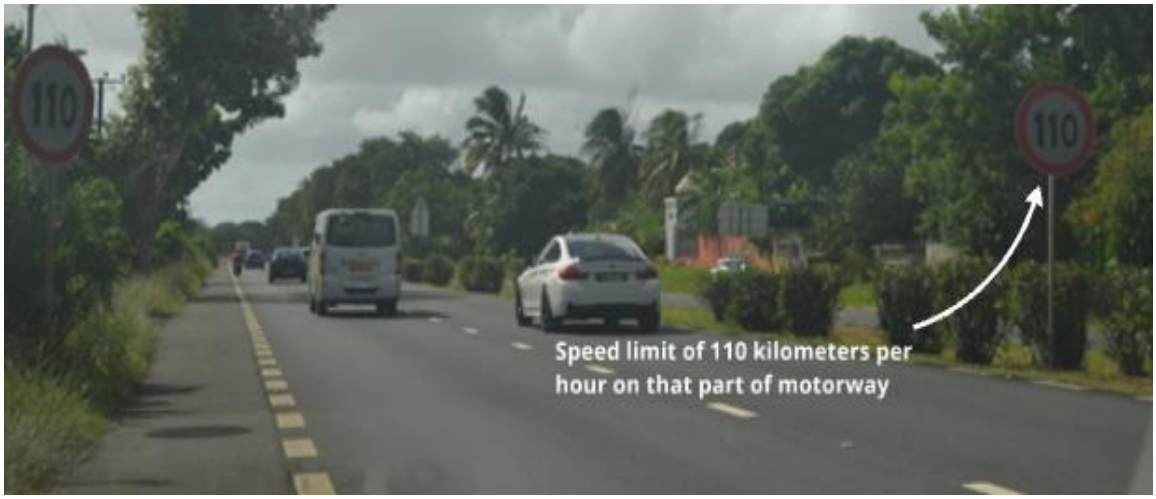
Case Study 1 describes the recommendations formulated and the status as of March 2021.

Case Study 1: Follow up on Crash Investigation Report in respect of a fatal accident at Bois Marchand along Motorway M2 on 5 December 2017.

Despite the availability of a footbridge near the crash spot, the pedestrian crossed the motorway and was hit by an oncoming car and died on spot. Several recommendations made in the related Crash Investigation Report were attended, but an important recommendation to encourage pedestrian to use the footbridge was not implemented as of March 2021. This included the use of engineering measures like a barrier (handrail of appropriate height) to prevent the crossing of the motorway along which the speed limit is 110 kilometres per hour. According to the Report, a pedestrian hit by a vehicle moving at a speed of 60 kilometres per hour had a probability of 60 percent of being killed. At that particular spot, the risk of fatality is very high for pedestrians, as vehicles can legally move at a speed of up to 110 kilometres per hour.

Photographs (as per Figures 4 to 7) taken during site visit in March 2021 near the pedestrian footbridge, show that no such barrier had been installed and pedestrians exposed themselves to the risk of being killed by not using the footbridge.

Figure 4: Speed limit along motorway at Bois Marchand



Source: NAO

Figure 5: No barrier installed under the footbridge as of March 2021

Source: NAO

Figure 6: Pedestrian crossing motorway instead of using the footbridge

The identity of the pedestrian has been concealed.
Source: NAO

Figure 7: Group of pedestrians crossing motorway instead of using the footbridge

Source: NAO

As from January 2019, road crash investigations were discontinued as no consensus was reached on the quantum of allowances payable to the four teams. The potential benefits from producing such reports had been foregone.

A.8.2 Transfer of knowledge

There are many ways in which knowledge transfer activity can be undertaken. These should be focused to both improve specific technical knowledge and general understanding of the road safety field. Opportunities should be taken to seek and benefit from contributions from different entities, experts and contributors. The examples below illustrate how opportunities for sharing and transfer of available knowledge were not being maximised:

(i) Information on incidence of mechanical defects in vehicles involved in fatal road crashes

Neither the Police Service nor the Ministry kept statistics related to the incidence of failure of brakes or mechanical parts of vehicles involved in fatal accidents. The Police Service did not carry out in-depth investigations to establish the circumstances that have led to road deaths and injuries. As per the Road Traffic Act, Police collected data, information and statements to identify which traffic regulations had been breached in respect of road crashes not covered by the '*Agreed Statement of Fact'*. Cases files were then prepared for prosecution of parties considered to have breached the regulations.

However, the Mechanical Engineering Section (MES) operating under the aegis of the Ministry of National Infrastructure and Community Development (MNICD), is an

important stakeholder mandated to survey accidented vehicles, particularly those involved in fatal accidents. As per its mandate, Officers of MES assist police officers to determine if failure of brake or mechanical parts could have been the cause of a fatal accident. Files kept by the MES did not contain reports on the examination of vehicles involved in fatal accidents . A brief on the likelihood of failed brake or mechanical parts in fatal road crashes during 2016-2020 was requested in January 2021 from MES in order to have a consolidated view on the incidence of failed mechanical parts on fatal accidents. Same was not provided as of March 2021.

The Ministry did not consider the importance of obtaining such information in order to have an independent overview on the extent of its fitness control system was effective towards ensuring safe vehicles on public roads.

(ii) Sharing of knowledge

The Mauritius Research and Innovation Council had funded several research projects related to road crashes. Two such reports, had not been examined at Ministry's or Council's level. For example, in the Report '*Investigating the causes of fatal accidents in Mauritius using discrete time series model*', it was highlighted that useful information was not captured on the PF 178. Recommendations in this report were not considered with a view to enhance data capture and analysis. Paragraph E.2.3 refers.

SECTION B

Licensing and admission of Safe Users

Key findings

- *Due to increasing motorisation, the number of accidents, motor vehicles involved, casualty accidents and casualties was on the increase until period 2016-2019 when they stabilised. However, the objective of the Strategy was to reverse the trend.*
- *High performing countries that had adopted the Safe System Approach, had witnessed reductions in road traffic deaths and injuries despite increasing motorisation, following continuous interventions over several years. The challenge today, for countries like Mauritius, is for the downward trends in road traffic deaths and severe injuries seen in these countries to be replicated in a shorter time frame.*
- *The re-engineering of the training and licensing system initiated in 2017 had not delivered the expected results for autocycles and motor cycles. As of March 2021, the challenges relating to competent training, testing and licensing were still outstanding with little visibility on how they would be addressed effectively.*
- *As of March 2021, based on resources available, neither there was capacity to train the outstanding number of learner riders, nor the Police Service had the capacity to carry all the tests for auto/ moto cycles by 2026.*
- *More than five years have already elapsed since the re-engineering of the training and qualification process of Driving Instructors was identified as a priority in the Strategy. The modalities of imparting the training were still at discussion stage . Less than five years remained for this re-engineering process to contribute towards realisation of the target of reducing by 50 percent the number of Killed and Seriously Injured.*

B.1 Introduction

Analysis[17] of crash statistics from Statistics Mauritius and the Police Forensic Laboratory reports included the following human contributory factors for road crashes: wrong perception of risks particularly among young road users, and drivers not possessing appropriate driving knowledge and skills. Assessment of drivers' attitudes and skills comprise the following aspects:

- Knowledge (knowledge of the traffic codes and regulations).
- Know-how (driving skills, vehicles controls and manoeuvres).

[17] As par Section 5.7 'Strategic Point No 7 : Re-engineering the driver training and licensing scheme' of the National Road Safety Strategy for Mauritius 2016-2025'

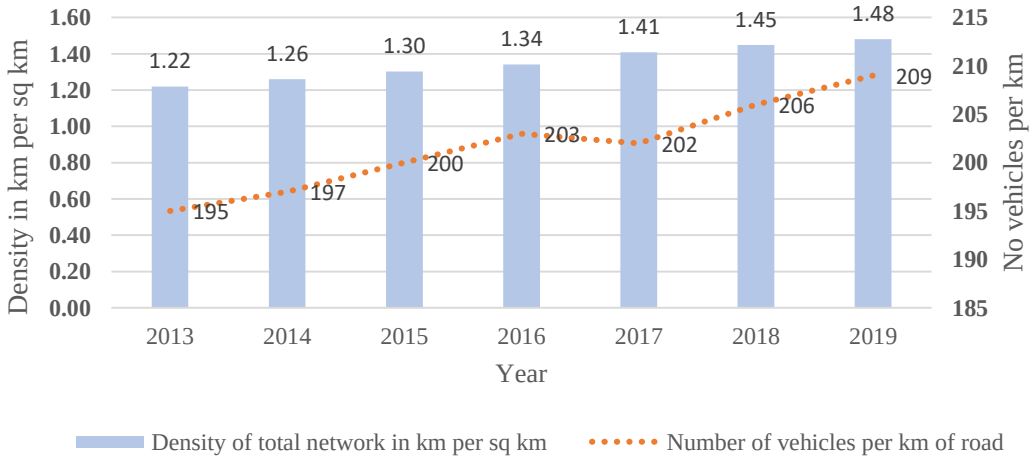
- Good practices (humility, courtesy, respect of traffic codes and sharing of road space).

The driver training and licensing scheme in Mauritius was conceived without any set standards or national training program. It worked to certain extent, but not always, whereby drivers were not always able to cope with traffic situations.[18]

The traffic situation in Mauritius has been evolving with respect to *motorisation*- the process of adopting and using motor vehicles as a core part of economic and daily life. During the decade 2011-2020, there had been an average of 5.6 percent increase in the number of registered vehicles, from some 384,000 as of January 2011 to reach some 600,000 in December 2020. Car and auto/motor cycles constituted 80 percent (cars 43 percent and auto/motor cycles 37 percent) of the fleet inventory in 2020. Annually some 14,000 competent licences were issued during this period. Increasing numbers of vehicles, learner licences and competent driving licences had led to increasing motorisation.

Under the Road Decongestion Programme, the road network has also increased. Figure 8 shows the density of total network in kilometres per square kilometres (the ratio of the total number of km of roads to the area of Mauritius -1,868 sq. km) for period 2013-2019. The density has been increasing by some three percent annually. Also illustrated is the number of vehicles per kilometre of road network, which has kept increasing by one percent at a lesser rate than the road density.

Figure 8 : Density of Road Network and Number of vehicles per Kilometre during 2013-2019



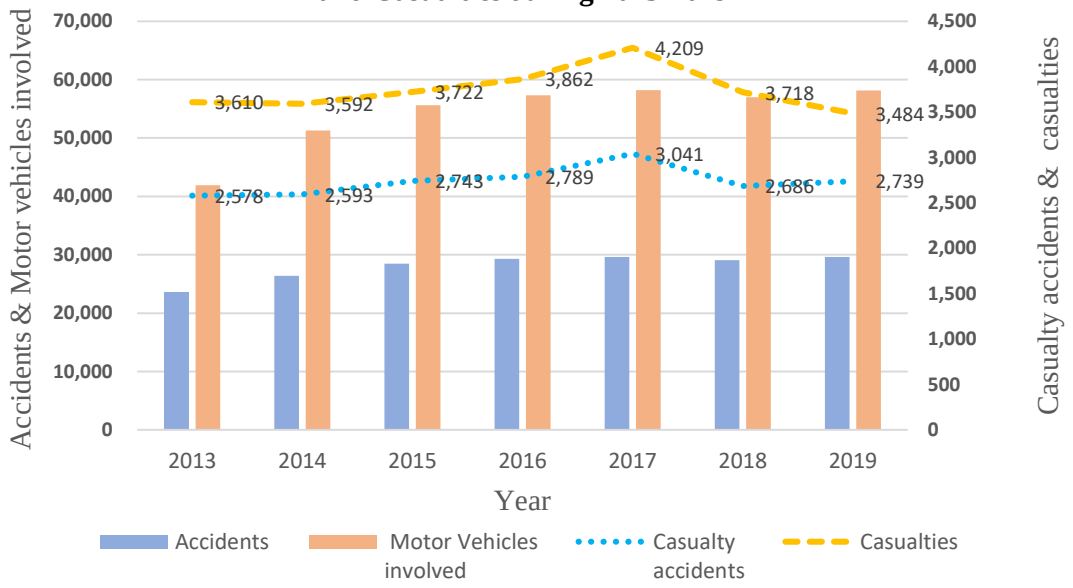
Figures extracted from Transport Digest 2019- Statistics Mauritius

Source: NAO Analysis

[18] ibid.

The number of accidents, motor vehicles involved, casualty accidents and casualties has been on the increase until period 2016-2019 when it stabilised. Figure 9 refers.

Figure 9 : Number of Accidents, vehicles involved, casualty accidents and Casualties during 2013-2019



Figures extracted from Transport Digest 2019- Statistics Mauritius

Source: NAO Analysis

Against this backdrop of increasing motorisation in Mauritius, this stabilisation is an indication of the progress that has been made. However, high performing countries that have adopted the Safe System Approach have seen reductions in road traffic deaths and injuries despite increasing motorisation. The challenge today is for the downward trend in road traffic deaths seen in these countries to be replicated in other (mainly low- and middle-income) countries, but in a shorter timeframe[19]. These achievements are the cumulative result of making infrastructure safer, improving the safety of vehicles, and implementing a number of other interventions known to be effective at reducing road traffic injuries[20].

The Strategy highlighted the need to reduce the malfunctioning of the then prevalent training and licensing scheme in order to effectively contribute to reduce the number and severity of road accidents. One of the measures recommended was to put in place a mechanism to ensure proper licensing of users. A new legal framework was developed in 2017 for the implementation of a National Standard Driver Training Curriculum (NSDTC). The NSDTC project included a review of the assessment methods and reorganisation of the qualification and licensing process of Driving Schools and Driving Instructors for motor

[19] https://www.who.int/violence_injury_prevention/road_safety_status/2015/Section_3_GSRRS2015

[20] Road Safety in the Western Pacific Region 2015- WPR/2016/DNH/072- World Health Organisation

cars and motorcycles.

This Section describes the legal framework, examines the design and implementation of driver training and licensing schemes, their status as of March 2021 and the findings are organised as follows.

- *B.2 Licensing of auto/motor cycles*
- *B.3 Licensing of motor vehicles*

B.2 Legal framework, Design and Implementation of Training and Licensing System for auto/motor cycles

During the period 2010-2014, auto/motor cycles were involved in 40 percent of total injury crashes, while accounting for some 32 percent of fatalities[21]. During that period, they accounted for some 41 percent of the fleet of registered vehicles. An analysis[22] of 256 motorcycle fatal crashes which occurred on public roads during period 2010-2013 revealed the following: most of the riders killed were males, aged between 21 and 30 years and almost two-thirds of the riders involved in the fatal crashes had either the Learner's licence or had no licence at all. The factors associated with these crashes included inexperience, risk-taking behaviours, and issues related to training and licensing.[23]

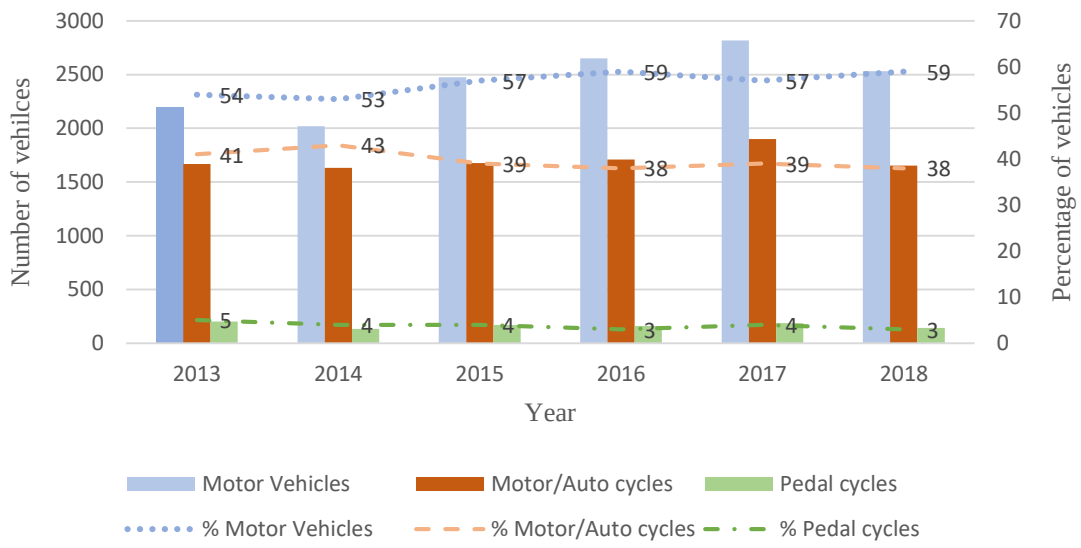
There had been no improvement since period 2010-2014 in terms of accident-causing casualties and fatalities. During period 2013-2018 auto/motor cycles accounted for an average of 39 percent of the fleet and were involved in some 40 percent of accidents involving casualties. Figures 10 refers.

[21] "Maximising motorcycle safety in Mauritius" of June 2015- A report from a multidisciplinary review team led by the Traffic Management and Road Safety Unit.

[22]. ibid.

[23] ibid.

Figure 10 : Number and percentage by type of vehicles involved in accidents causing casualties during 2013-2018



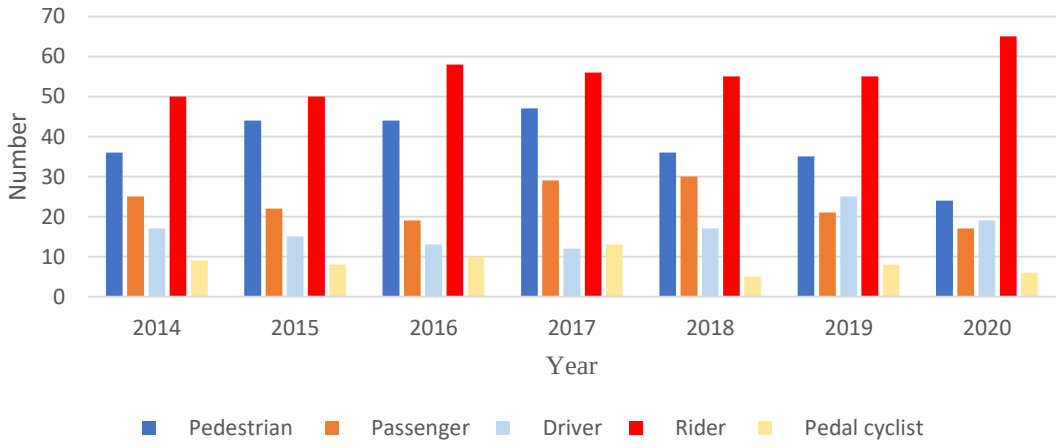
Figures extracted from Digest of Transport – Statistics Mauritius

Motor vehicles comprise Private and Taxi Cars, Bus, Lorries, Vans, other motorised vehicles

Source: NAO Analysis

In respect of riders of these auto/motorcycles and their passengers on secondary seats (known as pillion riders), they represented an average of 40 per cent of the casualties during that period. As regards the number of Killed and Seriously Injured, they were the worst hit in the road crashes. Every year, at least 50 of them died, and at least 200 were seriously injured. Figures 11 and 12 refer.

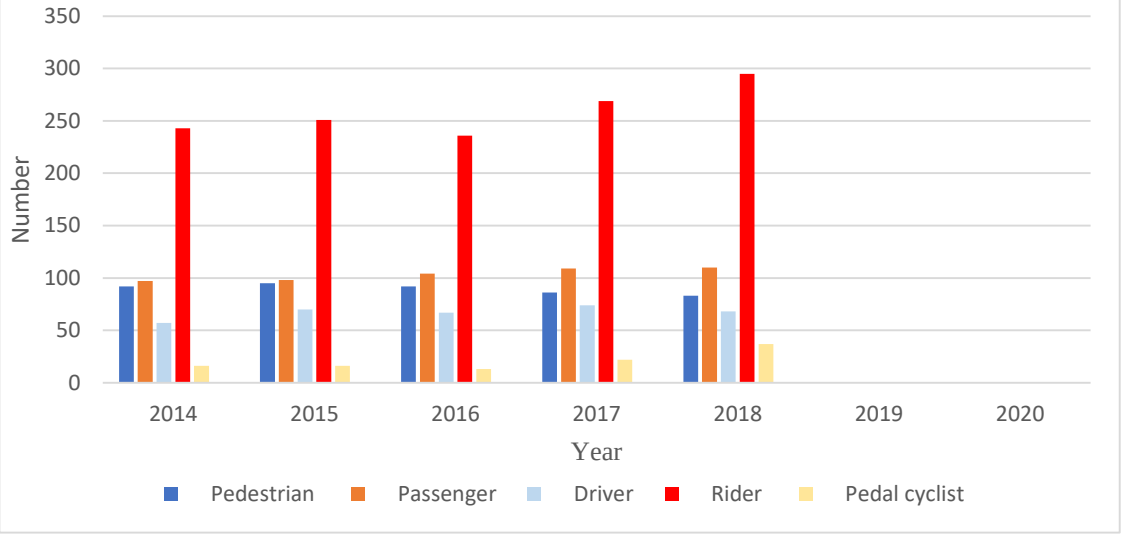
Figure 11 : Number of fatalities by type of user during 2014-2020



Figures extracted from Digest of Transport – Statistics Mauritius

Source: NAO Analysis

Figure 12 : Number of Seriously Injured by type of user during 2014-2020



Figures extracted from Digest of Transport – Statistics Mauritius

Figures for 2019 and 2020 not available in annual publication

Source: NAO Analysis

Figure 13 illustrates road markings following fatal accidents involving riders, and one captured during site visit.

Figure 13 **Road markings captured during site visit in respect of one fatal accident involving a rider.**

Source: National Audit Office

While young drivers and riders aged 16 to 30 years represented only a small proportion of the overall licence holders, they were substantially more likely to be involved in fatal and

injury crashes than older (experienced) drivers and riders[24]. During period 2016-2018, the number of fatalities was highest in the age segment 15-29 years, and riders topped the list.

Prior to 2018, there were no formal training course for auto /motor cycles available in Mauritius and there was no obligation to provide proof of completion of an approved motorcycle training course before taking a test for obtaining a full licence. For that category of users, driving lessons were mostly through self-learning. The majority of the riders kept their learner licences and did not opt to obtain the full competent licence[25]. To address this gap the Ministry took the initiative to introduce formal training through 'moto écoles'.

The next paragraph examines the introduction of formal training through 'moto écoles' in 2018 and the initiatives to introduce the Learner Driver Logbook under the NSDTC.

B.2.1 Legal framework for setting up 'moto écoles'

In the Report *"Maximising motorcycle safety in Mauritius" of June 2015,* a formal rider education/training coupled with a graduated rider licensing system was recommended as one of the crash preventions measures. In line with the Strategy and the NSDTC, the Road Traffic (Driving Schools and Instructors) Regulations 1966 were amended in September 2017 to make provision for the teaching and riding of auto/motor cycles. The Road Traffic Regulations 1954 were amended in March 2018, to provide a three-year moratorium to holders of provisional driving licences (obtained prior to March 2018), a three-year period to complete their training and pass the mandatory tests to obtain their competent driving licenses.

In 2017, some Rs16.5 million were spent on the training of 24 Driving Instructors and 15 Police Examiners in respect of auto/motor cycles. An additional Rs 2.5 million were spent during 2017-2018 for a campaign relating to new procedures for driving tests for auto/motor cycles.

In 2016, an 'Expression of Interest' was launched by the Police Service, inviting proposals from private promoters for the setting up of Driving Schools in each district of Mauritius. During 2017-2018, three Driving Schools were set up, benefiting from the training programme for the Driving Instructors.

B.2.1.1 Learner Driver Logbook

Though the law was amended to make provision for driving schools, it was not mandatory for a Learner Rider to learn the riding skills from a licenced 'moto école'. In July 2017, the Ministry proposed the introduction of a 'Learner Driver Logbook' which would help to

[24] *Ibid.*

[25] *Ibid.*

assess the progress of a learner rider, and submission of same would be mandatory prior to taking a driving test. The logbook would define the curriculum for learner riders in relation to the test that would be carried out in the process of issuing a driving licence to a person. The logbook would have to be filled in and signed by a Licence Driving School Instructor testifying driving lessons attended by the learner rider. However, the introduction of the logbook was deferred.

As from June 2018, new tests for competence were introduced. Since then the failure rate was very high. In the absence of a logbook, the enrolment in the 'moto écoles' was very low despite annual demand of some 7,000 learner riders. In order to reduce the failure rates and maintain a high level of standard in teaching of driving autocycles and motorcycles through these 'moto écoles', the Ministry again proposed the introduction of a logbook in December 2018. The proposal was not retained as the cost of training for the Learner Driver by 'auto écoles' was considered to be on the high side.

The next paragraph examines the initiatives taken by the Ministry to pursue competent training and testing of riders.

B.2.2 Initiatives of the Ministry to pursue competent training and testing of riders

In January 2019, the Ministry proposed some incentives by way of grants to reduce the cost of training borne by learner riders. This would enable them to receive formal, standardised and complete driving lessons which would contribute to road safety. As of December 2018, there were 450,894 holders of learners' licence for auto/motor cycles and details are as per Table 13.

Table 13	**Number and Age Distribution of licences of auto/motor cycles as of December 2018**
Age Group	**Number**
15-20	14,183
21-30	116,428
31-40	106,927
41-50	80,246
Above 50	133,110
Total	450,894
Source: Police Service Records	

The Ministry proposed a grant scheme which included the following main proposals:

- In respect of existing Learner Licences obtained at a cut-off date, the latter had to undertake a course of some ten hours, not requiring any practical test. An attestation would be issued by those Driving Schools certifying that the learner riders had successfully completed a ten-hour course for the renewal of their Learner Driving Licenses. The cost of the training amounted to some Rs 3,000 and a Rs 1,000 grant was proposed. Priority would be given to learner riders below the age of 30 years, with a moratorium of three years. Some 15,000 learner riders could be trained annually (based on the estimated capacity of the 'moto écoles'), requiring an annual grant of Rs 15 million annually.

- Regarding new applications of learner riders (some 7,000 annually), a grant of Rs 1,000 would be allocated to each. This would require an additional yearly grant of some Rs 7 million.

The proposal, requiring some Rs 22 million grant annually for at least over three years was targeting in priority the most vulnerable group (about one-third in proportion) of riders in road crashes. However, there was no planning for the remaining two-third in terms of training capacity of the 'moto écoles', deployment of testing resources by Police Service and yearly grant required. The scheme was not approved.

B.2.3 Renewal of Provisional Driving licences

All those issued with Provisional Driving Licences (PDL) had up to March 2021 to pass the required test, failing which same would expire by that cut-off date. In August 2020, Government decided to extend the cut-off date to March 2026. According to Police records, as of August 2020, there were some 421,000 holders of Provisional Driving Licences. It was estimated that some 250,000 holders were active out of the fleet of some 214,000 registered autocycles and motorcycles. Only some 30,000 were estimated[26] to be holders of competent driving licences. The following arrangements were being implemented:

- Holders of PDL for autocycles have up to March 2022 to renew their PDL and make an application for an Off-road driving tests. The test needs to be taken by March 2026, and successful candidates will be awarded a competent driving licence. Unsuccessful candidates need to apply for further driving tests until expiry of the PDL by March 2026. Those who have not renewed their PDL by March 2022, will have their PDL expired.

- Holders of PDL for motorcycles will still have up to March 2022 to renew their PDL, failing same will expire. There are specific requirements regarding oral and Off-road tests and these holders must pass those tests by March 2026.

[26] Actual figure not available

However, these arrangements did not address the need to receive formal, standardised and complete driving lessons before appearing for a test. For the period 2018-2020, less than 5,000 learner riders passed their competency tests. Only one of the three licensed 'moto écoles' was operational as of January 2021. Another one started its operations but had to cease due to low intake[27]. The remaining one did not start operations. As of March 2021, it was reported that neither there was capacity to train the outstanding number of learner riders nor the Police Service had the capacity to carry all the tests by 2026.

At the rate the tests were carried out and the provisional licence holders were passing their tests, it was unlikely that the target to pass all the tests by March 2026 would be achieved.

B.3 Legal framework, Design and Implementation of Training and Licensing System for motor vehicles

The driving culture in Mauritius has been acquired from experience and not through proper guidance as compared to countries where standard national driving education and training schemes have been established[28]. The driving pedagogy for motor vehicles has so far been based on practical driving training in live traffic. The focus is on just to learn to pass the driving test as specified in PF 72 under the Road Traffic Act. As per the PF 72, a candidate needs to be successful in both 'Oral Examination' and 'Competency to Drive' examinations. Also, as per the Strategy, there was no obligation for a learner driver to follow training from licensed instructors before appearing for a driving test.

The training of motor car drivers is regulated under several sections of the Road Traffic Act and under Road (Driving Schools and Instructors) Regulations 1966. The driving curriculum of driving examiners, instructors and learners and qualification process were not clearly defined in the Act and Regulations. Driving Examiners Courses were regularly held at the Police Training School so that there is a pool of examiners available to conduct driving tests. The Police Service did not run training courses for driving instructors. Instead, it conducted only examinations through the Mauritius Examination Syndicate, based on UK standards and Driving and Vehicle Standards Agency (DVSA)[29] publication and guidance. Driving Instructors do self-learning to sit for the test.

In September 2020, the Ministry signed a Memorandum of Understanding (MOU) with the Mauritius Institute of Training and Development (MITD) to provide necessary technical and pedagogical skills to the licensed driving instructors that would help them provide safe

[27] As per Ministry's records

[28] National Road Safety Strategy 2016-2025.

[29] The Driver and Vehicle Standards Agency (DVSA) is an executive agency of the UK Department for Transport . Among other activities it carries out driving tests, approves people to be driving instructors and MOT testers.

driving skills to learners. This was achieved after more than one year of discussion.

The next paragraph examines the progress achieved on the implementation of this initiative.

B.3.1 Progress achieved on Training of Driving Instructors for motor vehicles

It was considered essential during that process to devise a standard curriculum for the training, clear legal procedures for licensing of driving instructors and driving schools[30]. A similar process needs to be available for future training of driving instructors and examiners. There was an expectation that examiners also should be well versed in training of drivers and driving instructor's training to become suitable qualified examiners.

The MOU made provision, among others, for the following responsibilities and deliverables:

- The MITD was responsible for the bidding process for selection of the successful bidder, award of contract. It should arrange for delivery of the training programme on its premises and issue Certificate of Achievement to those who completed the training. The training programme will be managed in collaboration with the Ministry.

- The Ministry would assist by providing course content, select participant and plan training schedule.

The Ministry would bear all the costs, estimated at some Rs 3.8 million. This included payment to the external training provider and MITD's management fee. A Steering Committee would be set up at the Ministry to ensure effective implementation of the project.

As of March 2021, no Steering Committee had been set up to drive the project forward. There was no visibility on how many instructors and examiners would be trained, recruitment criteria of potential resource persons and time frame of the project. Other equally important aspects had not yet been addressed, such as necessary legal amendments required, the potential recourse to 'Learner Driver Logbook', obligation of learner drivers to follow training from these trained licensed instructors, and cost of the training for learner drivers.

High performing countries that have taken on the Safe System Approach and have witnessed reductions in road traffic deaths and injuries despite increasing motorisation following continuous interventions over several years. The challenge today, for countries

[30] As per Ministry's records

like Mauritius, is to reverse the trends in road traffic deaths and severe injuries seen in these countries to be replicated in a shorter time frame. More than five years have already elapsed since the re-engineering of the training and the qualification process of Driving Instructors was identified as a priority in the Strategy. As of March 2021, the modalities of imparting the training were still at discussion stage.

Less than five years remained for this re-engineering process to contribute towards the realisation of the target of reducing by 50 percent the number of Killed and Seriously Injured. Further delay in implementing the project will entail more cost and will not contribute to reduce road fatalities and injuries.

SECTION C

Enforcement of Road Safety Legislation

Key findings

- *The enforcement of road traffic legislations as of 2016 had helped to stabilise the number of road accidents and the number of Killed and Seriously Injured, but not to reverse the trend.*
- *The Road Traffic Enforcement Plan which had to be prepared by the Police Service in collaboration with the Council and the Ministry was not prepared.*
- *The Police Service had set a target to render public roads safer by reducing the number of road accident (Killed and Seriously Injured) by 3 percent annually since 2015. This was not achieved as the number of Killed and Seriously Injured increased from 669 in 2015 to 740 in 2018.*
- *Only one out of two contraventions established, addressed offences considered as the main causes of road crashes and severe casualties and deaths.*
- *As per records of the Council, Sectoral Committee and Ministry examined, the information provided by the Police Service was insufficient to provide reasonable assurance on its level of enforcement.*
- *Some 75 percent of contraventions established during period 2016-2019 required the physical mobilisation of police resources out of which only some 25 percent tracked offences related to main causes of road crashes and casualties.*
- *The efficiency and swiftness of enforcement through prosecution and administration of sanctions were impaired by several constraints and challenges.*
- *In June 2018, there was backlog of some 210,000 contravention cases pending inquiry and as of January 2021 it stood at some 185,000. This represented a full year workload that had to be carried forward as backlog and comprised several thousands of cases with offences detected more than two years ago.*
- *Difficulties in ascertaining the precise address of offenders and the ability to warn them personally, further impacted negatively on the efficiency and effectiveness of the prosecution process.*
- *This accounted for the striking out of some 37,000 road traffic offences during 2018-2020, estimated by NAO to cost least Rs 100 million during detection, prosecution and Court proceedings.*

C.1 Introduction

Enforcement of road traffic laws is an essential component in preventing road crashes, deaths and serious injuries. Road traffic laws, in principle, promote safe behaviour through compliance. Compliance is also driven by the fear of being detected and sanctioned through

penalties[31]. Enforcement addresses that element of fear in drivers of most likely to be caught and sanctioned in event of breaking the traffic rules. By targeting drivers engaging in risky and unsafe behaviour, this reduces the chances for them to harm themselves and others.

There are three components in an enforcement system:

- *Legislation*: appropriate regulatory framework and penalties in place.
- *Enforcement* (Detection) detection of offences by the Police Service and establishment of contraventions leading to sanctions through fixed penalty fines and prosecution.
- *Prosecution and sanctions*: Appropriate sanctions administered following prosecution by police and Court proceedings in respect of the contraventions.

The quality of traffic law enforcement is determined by the extent to which these activities are geared to each other to make up an effective chain of enforcement and supporting measures.

The regulatory framework and penalties, under the direct responsibility of the Ministry have been addressed in Section A. This Section examines detection of offences and establishment of offences by the Police Service in paragraph C.2. Contraventions cases handled at Courts' level through prosecution are addressed in paragraph C.3. The Ministry and the Council have oversight roles in respect of these two components.

Findings have been organised as follows:

- *C.2 Enforcement through Road Traffic Enforcement Plan*
- *C.3 Enforcement through prosecution and administration of sanctions*

C.2 Enforcement activities through a Road Traffic Enforcement Plan

As per good practices, successful behavioural change for road safety, and the resulting reduction in Killed and Seriously Injured due to targeted behaviours are achieved through development of strong general deterrence. Effective enforcement strategies aim to increase the road user's perception of being apprehended if they continue with high-risk behaviours or do not comply with the law. Educating road users (discussed in Section F) is critical to

[31] 'How Traffic Law Enforcement can contribute to Safer Roads- Pin Flash Report of 2016 European Transport Safety Council.

support enforcement. Maximum success will be achieved by combining education and enforcement. Once a driver or rider is convinced of the safety value of disciplined road user behaviours, they will be encouraged to consistently comply with the law rather than comply through the fear of enforcement.

According to the Strategy, the enforcement of road traffic legislations as of 2016 had helped to stabilise the number of road accidents and Killed and Seriously Injured but did not help to reverse the increasing trend. The tracking down of the '*Fous du volant'* who drive dangerously at inappropriate speeds and those '*irresponsible drivers'* who drink and drive or drive under the influence of drugs, can only be done through appropriate police interventions. As per studies carried out overseas, equally applicable for Mauritius, some two percent (of drivers in the countries surveyed) driving under the influence of alcohol committed more than ten percent of offences, and were involved in 25 percent of damage only accidents and in 40 percent of the Killed and Seriously Injured accidents.

To that end, the formulation and implementation of a **Road Traffic Enforcement Plan** (**RTEP**) by 2018 was recommended in the Strategy, the status of which is examined in next paragraph.

C.2.1 Status of the Road Traffic Enforcement Plan (RTEP)

The RTEP was expected to be developed by the Police Service in collaboration with the Lead Agency and submitted to the Authority responsible for road safety management. In November 2017, the Police Service submitted a draft Road Safety Plan to the Ministry, describing its prevailing enforcement strategy and required measures over short to long term periods. The measures comprised the reorganisation of the Road Safety Unit, additional training, personnel, vehicles and equipment. Based on this input, the Ministry prepared a '*Resume of the Agenda on Enforcement Strategy'* which did not include objectives, targets, outputs time frame and any measurement and monitoring mechanism. There was an expectation in this '*Resume of the Agenda on Enforcement Strategy'* that the enforcement level of Police Service should count towards making our roads safer, and police controls should:

- take place regularly over a longer period.
- be unpredictable and difficult to avoid.
- combine highly visible and less visible activities.
- focus on traffic offences (e.g. speeding, drink and drug driving, failure to wear a seatbelt, mobile phone use etc.) that have a direct, proven relationship with collisions or severe casualties

Based on the '*Resume'*, the Police Service was requested to prepare an Enforcement Plan, which did not materialise as of March 2021.

As from 2018, several committees were set up by the Ministry under the 'Road Safety Initiatives' with the Strategy's Action Plan as backdrop. These committees had to address the following themes: Legislations, Education/Sensitisation, Enforcement Actions, Total Loss/Scrap Yard regulations, Infrastructure and Insurance Reform. On a regular basis, the Police Service reported on its enforcement and sensitisation activities to the Ministry. However, it was not accompanied by targets or indicative level of enforcement it would exercise, save on offences which are more likely to cause road crashes, fatalities and serious injuries. In counterpart, the Ministry through committees did not assess what level of enforcement was required in respect of such offences to decrease the yearly number of Killed and Seriously Injured.

Except for the long-term target of reducing Killed and Seriously Injured by 50 percent, the Strategy did not establish short and medium terms target to guide interventions. In the absence of these short and medium-term targets, the Police Service as part of its own Policing Plans, had set yearly targets for its interventions in respect of road safety as follows:

- Traffic Branch Action Plan 2015-2016 : Increase by five percent (i) the number of operations targeting drink driving, speeding and dangerous driving. (ii) the number of targeted operations along axes prone to road accident. (iii) the number of sensitization sessions on Road Safety.

- Strategic Policing Plan 2015-2018: Key Performance Indicator- Render our roads safe by reducing the number of road accidents (Killed & Seriously injured) by three percent.

- Policing Priorities 2018-2019: Render our road safer by reducing the number of road accidents (Killed & Seriously Injured) by three percent.

- Traffic Branch Annual Operation Plan 2021 : Aim at further reducing road accidents by performing more intelligence-led speed checks, alcotests operations and establish road-safety related contraventions at accident-prone areas. Render our road safer by reducing the number of road accidents (Killed & Seriously Injured) by three percent.

Though these targets were used as tools to guide interventions, the number of Killed and Seriously Injured did not decrease. Instead, it was on an increasing trend: from 669 in 2015 to 740 in 2018.

C.2.2 Targeting high-risk behaviours of road users

The seven Police Divisions comprising police stations across the island under the command of Divisional Commanders, Emergency Response Services and the Traffic Branch were reported to be involved in the enforcement of several themes which included the following:

- The Traffic Branch routinely carried out operations targeting offences such as drink driving, exceeding speed limit, use of phones whilst driving, dangerous and reckless driving. These operations were carried out night and day by the Traffic Enforcement Squad (TES) the Road Safety Unit (RSU) and the Traffic Field Division. Alcotest operations were also being carried out daily on motorways at night and at specific spots across the island to target drunk drivers. During weekends additional alcotest were carried out during whole night specially targeting night clubbers.

- Crackdown operations targeting mainly drink driving offences were being carried out at regular intervals to create higher impact. Also, during weekends, the Traffic Branch assisted by the Special Supporting Unit (SSU) performed motorcycle checks. During those operations, riders were being sensitised on road safety and more specifically on offences they had committed.

- Divisional Commanders under instructions of the Commissioner of Police also arranged for the enforcement of the road traffic laws through police stations across the island. With the assistance of the ERS, motor vehicle checks, speed checks, alcotest operations, auto/motor cycles were also carried out. At night, regular roadblocks were established with the help of the Special Mobile Force (SMF) and SSU.

- Visible policing was being maintained at hotspots by placing police vehicles with light bars on and with police officers on board at strategic points.

Details of contraventions established during these interventions for period 2015-2019 are presented in Appendix VII. Contraventions targeting risky behaviours are analysed in Table 14 and Figure 9.

Table 14	Contraventions analysis by number, type of offence and means of establishing same for period 2015-2019				
Contraventions	**2015**	**2016**	**2017**	**2018**	**2019**
1 *Offences considered to be among the main causes of road crashes and casualties*					
i. Making use of cellular phone while driving	4,158	6,137	11,592	8,587	4,605
ii. Failing to wear seat belt while driving	6,582	8,416	10,749	9,687	4,323
iii. Driving under influence of alcohol and drugs*	1,927	2,012	1,973	1,997	1,757
iv.Exceeding speed limit-established with hand- held devices	39,285	40,969	30,676	41,669	33,617
*Sub-total (requiring physical deployment of police resources) **	*51,952*	*57,534*	*54,990*	*61,940*	*44,302*
iv. Exceeding speed limit-Photographic Enforcement Device Unit (*fixed speed cameras)*	19,078	45,366	62,662	45,526	47,935
Total	71,030	102,900	117,652	107,466	92,237
2 Other Offences**	131,140	125,289	118,342	132,028	81,352
Grand Total	202,170	228,189	235,994	239,494	173,589

*Driving motor vehicle with alcohol concentration above prescribed limit, cycling & in charge of a motor vehicle under the influence of intoxicating drink/ drugs

** Established through physical deployment of Police resources (personnel, vehicles, hand-held devices, and other equipment and accessories)

Source: NAO Analysis

The number of annual contraventions established has been on the increase since 2015, except in 2019 when it dropped by some 66,000 when compared to the preceding year. Except for 2015[32], the proportion of these four types of offences was some 45 percent to 52 percent of the total number of contraventions established. Table 15 refers.

[32] All fixed cameras were switched off from 31st December 2014 to 5th September 2015, following Government decision.

Table 15	Contraventions: Main causes of crashes and casualties, and Other Offences as percentages of total number of contraventions established for period 2015-2019					
	Type	2015	2016	2017	2018	2019
1	Related to Main Causes*	26	25	23	26	25
2	Related to Main causes **	9	20	27	19	27
	Subtotal	35	45	50	45	52
3	Other Offences*	65	55	50	55	48
	Total	100	100	100	100	100

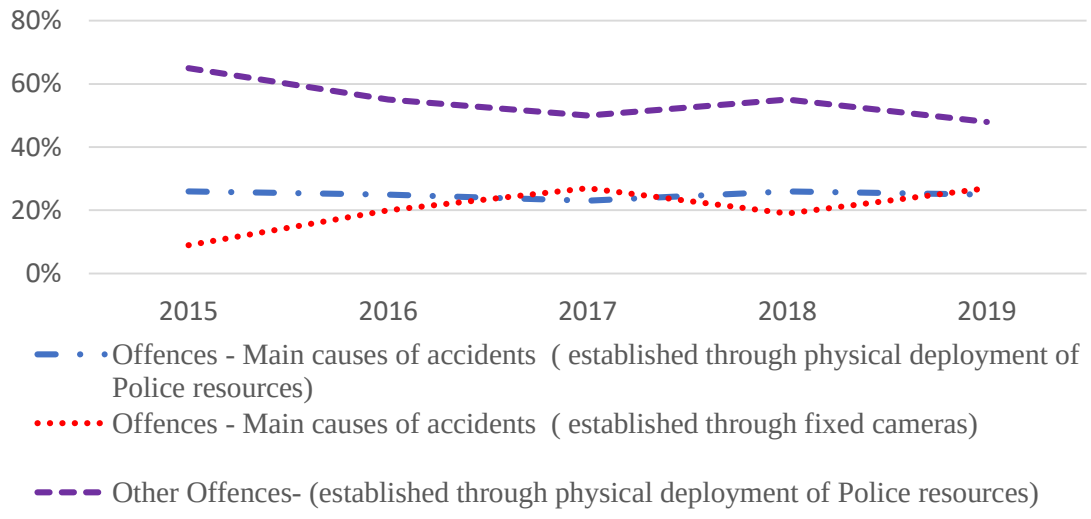
**established through physical deployment of police resources*

***established through Fixed Cameras*

Source: NAO Analysis

Similarly, for period 2016-2019, the proportion of contraventions established in respect of the four offences through physical deployment of police resources had remained constant at around 25 percent, similar to those established through fixed cameras which was around 23 percent. The proportion of 'Other Offences' was on average 52 percent. Figure 14 refers.

Figure 14 : Analysis of contraventions by nature of offence and type of interventions



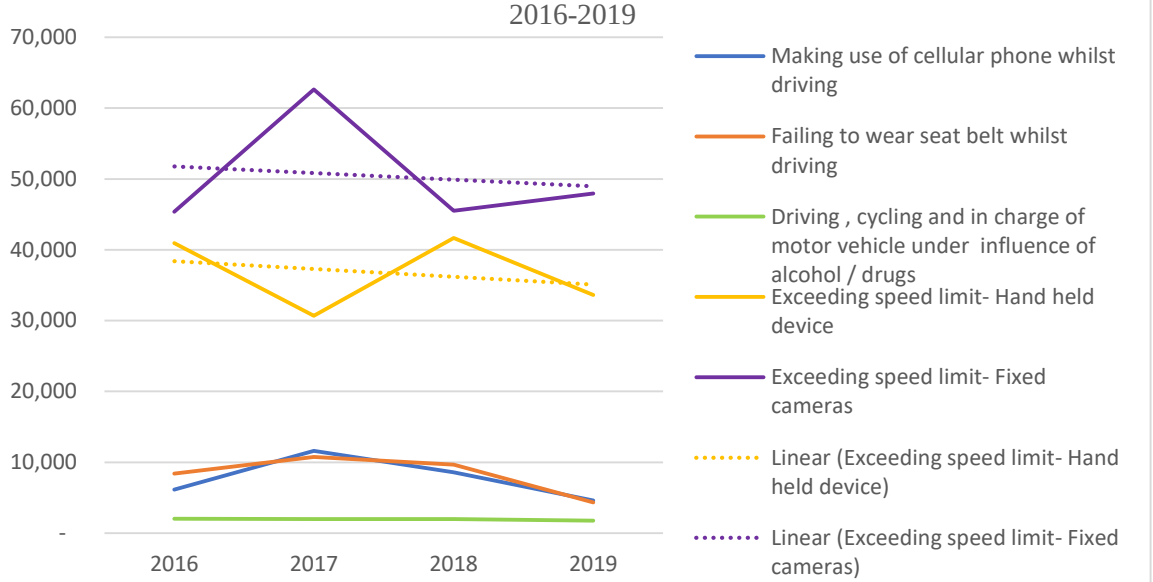
Source: NAO Analysis

This meant that on average, only one out of two contraventions established, addressed the main causes of crashes and casualties.

Figure 15 shows that the downward trend in number of offences detected in respect of the

four main causes of road crashes involving Killed and Seriously Injured during the period 2016-2019. The Police Service had frequently built the case at the level of the Ministry for additional resources and reorganisation of its interventions to step up tracking of such offences.

Figure 15 : Trend in the number of contraventions established during period 2016-2019



Source :NAO Analysis

There were some 200 police personnel of the Traffic Branch (TES and RSU) since 2015, directly involved in traffic patrol and enforcement island wide, with additional support from personnel of police stations and other units. The RSU comprising 82 personnel as of March 2021, had a centralised structure to intervene across the island in respect of enforcement and road safety education. This centralised structure was considered inadequate , in the '*Resume of the Agenda on Enforcement Strategy'* to extend coverage over the whole island. Instead, the need for a decentralised structure with additional personnel, vehicles, and enforcement equipment was communicated to the Ministry in 2018 and was considered as part of a strategy to address the increased number of road accidents.

During visits to the two Police Divisions and meeting with Station Commanders, NAO was apprised of the competing priorities of the available police resources. They did intervene with available resources after prioritising interventions related to other core duties. Management of Traffic Branch also argued that their interventions were determined by the available resources, and these have contributed enormously to stabilise the number of killed on the roads despite the increasing trend in motorisation and number of drivers in the community.

The next paragraph examines how the Ministry, in its governance role monitored the level of enforcement of the Police Service in absence of a RTEP.

C.2.3 Monitoring of the Enforcement Level of Traffic Law by the Ministry

The Ministry's '*Resume of the Agenda on Enforcement Strategy'* of November 2017 formulated a series of recommendations to enhance the effectiveness of the Police Service in enforcing traffic laws to reduce the annual number of road crashes resulting into casualties. It included the following:

- Coordinated publicity and enforcement road safety campaign as publicity in itself has been proven to be less impactful if it is not coupled with enforcement on the roads.

- Covert speed enforcement in accident prone areas using speed guns as such operations increase the fear of being caught by police.

- Selection of sites and methods for detecting drink driving (anywhere and anytime) as these are perceived by the public to be always at specific known locations.

- Calendar of road safety on specific themes to be planned and agreed by the Council as such a calendar would make police enforcement more effective with a synergy of various stakeholders.

- Regular publicity on the number of road users being caught as these would increase the perception of the likelihood of being caught, and act as a deterrent.

- Increased police personnel, road safety patrol vehicles and equipment. For each of the seven divisions additional four police officers patrolling in a vehicle, equipped with speed detectors and breath analysers, under the command of the Traffic Branch. Increasing the 40 ERS police vehicles with additional speed detectors. Also, doubling the number of motorcycles in the TES from 40 to 80.

Examination of the records of the Council, Sectoral Committee with Police and records at the Ministry revealed that the Traffic Branch regularly reported on the number of crackdown operations. In particular, on the number of contraventions established (e.g speeding, drink driving) in respect of offences considered as being the main causes of road crashes and severe casualties/ deaths. However, no details were submitted to the Ministry to provide assurance on how the Police Service was:

- coordinating enforcement with campaigns.

- carrying out covert operations in accident prone areas.

- making enforcement effective with a synergy with various stakeholders through a Calendar of specific road safety themes.

- carrying out publicity on the number of road users caught for violations.

Annually, some Rs 50 million are spent on staff cost involving some 100 (out of the 400 personnel of the Traffic Branch) personnel of the Road Safety Unit directly involved in traffic law enforcement and road safety education. In respect of budget estimates 2020-21, Police Service had set the following Key Action and Key Performance Indicator and Target in respect of road safety:

i. Key Action: Render our road safer through targeted crack-down operation against road traffic offences;

ii. Key Performance Indicator (KPI): Number of road traffic operations in relation to speeding, use of mobile phone and drink driving, and

iii. Target: the number of crackdowns for 2019-20 was estimated to be 450, while the forecast was 475 and 500 for 2020/21 and 2021/22 respectively.

However, the pertinence of setting the KPI and the targets in terms of the number of crackdowns were not addressed at the level of the Council and Sectoral meetings of the Ministry.

C.2.4 Intelligence-led interventions and business case for allocation of more resources

The ultimate goal of traffic law enforcement is to prevent accidents from occurring by deterring drivers in violating laws resulting in increased risk of road accidents. However, to ascertain how much traffic law enforcement is needed to decrease the number of accidents is quite complex. The relation between enforcement level and safety, in some studies[33], is based on the following assumptions:

- The present level of enforcement maintains the present level of road safety (‘ the basic equilibrium condition’).

- Reducing enforcement worsens safety (violations increase).

- Increasing enforcement improves safety (violations decrease).

[33] Elvik, R. (2000). Cost-Benefit Analysis of Police Enforcement. Working paper ESCAPE WP1 28.2.2000SM/1116/2000

- The marginal effect of increasing enforcement is gradually declining.

There are merits in the recommendations of the Police Service and the Ministry to allocate more resources to the Road Safety Unit for enforcement as the benefits exceeds the costs several folds. There would be potential increase in road safety through increase in compliance with the Road Traffic Act.

Under each enactment of the Road Traffic Act, penalties of varying amounts are prescribed for respective offences, out of which 204 offences fall under the Fixed Penalty System. If there is a requirement to ensure full compliance with the Road Traffic Act, then current policing resources must be increased several folds. Studies[34] have indicated that even if there are full compliance with all the laws, it is estimated that the potential impact of policing can only lead up to 50 percent reduction in number of accidents.

Prioritisation of enforcement through intelligence-led interventions is, therefore, critical to enhance road safety. Forms of misconduct in traffic behaviour are numerous and focussing on them all in enforcement is simply impossible. The ratio of police officers dedicated to traffic enforcement only and the number of driving licences varies in most European countries roughly from 1:2400 to 1: 5800. This is comparable to Mauritius with some 100 personnel of the RSU and some 500,000 driving licence holders. This means that among other things that while relatively few drivers may be influenced, only a few aspects of driving behaviour may be focussed on. These are associated with the capabilities of police personnel to measure and detect violations.

One of the advisory functions of the Council is to evaluate the cost-effectiveness of road safety measures. During the period 2016-2020, the Council and by extension the Ministry did not assess to what extent the interventions of the Police Service was intelligence led to address the main causes of road crashes with severities of injuries. For example, the assessment of what proportion of contraventions established through deployment of physical resources were addressing high-risk behaviours, and whether such contraventions were on the increasing or decreasing trend.

As analysed in paragraph C.2.2, some 75 percent of contraventions established during period 2016-2019 required the physical mobilisation of police resources out of which only some 25 percent tracked offences related to main causes of road crashes and casualties. In respect of the remaining 50 percent, the incidence ranged from high in some cases to very low in the majority of cases. Table 16 provides an analysis of contraventions categorised into '*Negligence*', '*Dangerous Acts*' and '*Non-injurious traffic violation'*. The analysis is segmented in two parts for comparing the types and proportion of offences: 2016-2017 and 2018-2019. In 2017 the components of an effective enforcement plan were discussed with focus high-risk behaviours. As from 2018 a Road Safety Initiative was initiated, including

[34] The "Escape" Project 2003- Traffic enforcement in Europe: effects, measures, needs and future.

ways and means to enhance interventions.

However, there were no marked improvement during period 2018-19. '*Driving without due care and attention*' and '*Dangerous driving*' are more likely to cause crash severity, but they still accounted for some 1.5 percent of contravention raised. Similarly, '*Worn out tyre'*, '*Load not properly secu*red' and '*Driving a vehicle in a dangerous condition*' still accounted for some two percent of the contraventions but are more likely to have an incidence on crash and severity.

In contrast, '*Other traffic Offences*' classified under '*Non-injurious traffic violations*' refer minor offences which incidence on road crashes and severity in very low or negligible, accounted for some 43 percent of the contraventions established. Establishment of these contraventions consume significant resources during interceptions followed by those spent on tracing payments (if included under Fixed Penalty system, preparation of case files at station level and prosecution units and finally at District Courts (section C.3 refers). Tracking these offences should have been of low priority for the Police as they score extremely low in enhancing road safety.

Table 16	Analysis of Contraventions percentage wise for periods 2016-17 and 2018-19						
Offences		YEARS					
	Negligence	**2016**	**2017**	***%***	**2018**	**2019**	%
1	Driving without due care and attention	1,353	1,529	*1.3*	1,577	1,382	1.4
2	Dangerous driving	160	125	*0.1*	241	146	0.2
3	Driver failing to render reasonable assistance to person injured in accident	2	10	-	2	4	-
	Dangerous acts						
		-	-	-	-	-	-
	Non-injurious traffic violations						
4	Other traffic offences	57,983	50,673	*45.5*	53,707	36,884	43.2
5	Failing to produce driving licence	22,404	22,428	*18.8*	25,735	14,169	19.0
6	Motor vehicle licence not affixed	8,636	10,424	*8.0*	12,229	7,057	9.2
7	Breach of conditions attached to provisional licence	8,481	6,969	*6.5*	7,178	3,467	5.1
8	Failing to comply with traffic sign	3,427	2,761	*2.5*	4,199	2,535	3.2
9	Worn out tyre	2,778	2,589	*2.2*	2,920	1,029	1.9
10	Parking on double yellow line	1,797	2,631	*1.9*	3,029	1,748	2.2
11	Inefficient silencer	2,015	1,778	*1.6*	2,495	1,292	1.8
12	Fittings out of order	1,406	1,472	*1.2*	2,485	1,230	1.8
13	Failing to stop when signalled by a police officer in uniform	1,487	1,718	*1.3*	1,804	1,250	1.5
14	Parking on prohibited area	1,158	1,569	*1.1*	1,841	1,231	1.5
15	Overtaking on uninterrupted white line	1,668	1,365	*1.3*	1,799	919	1.3
16	Parking on footpath/pavement	977	1,221	*1.0*	1,818	821	1.2
17	Driving without licence	994	929	*0.8*	976	842	0.9
18	Failing to produce driving licence/Certificate of insurance - delay	1,088	791	*0.8*	664	656	0.6
19	Breach of condition - carriers' licence	715	800	*0.6*	765	590	0.7
20	No tail- light	661	572	*0.5*	690	158	0.4
21	Using vehicle for another purpose	516	399	*0.4*	473	265	0.3
22	Failing to give name and address	452	466	*0.4*	431	373	0.4
23	Failing to provide specimen for Breath Test	435	337	*0.3*	398	223	0.3
24	Using vehicle without vehicle licence	917	253	*0.5*	274	230	0.2
25	Allowing oil to drop	339	278	*0.2*	170	79	0.1
26	Inoperative insurance policy	116	139	*0.1*	394	316	0.3
27	Failing to effect transfer	259	202	*0.2*	207	157	0.2
28	Load not properly secured	279	249	*0.2*	240	120	0.2
29	Failing to report accident within delay	184	238	*0.2*	237	175	0.2
30	Expired certificate of fitness	144	153	*0.1*	212	314	0.3
31	Bicycle contravention	181	115	*0.1*	41	58	0.1
32	Driving a vehicle in a dangerous condition	115	79	*0.1*	136	21	0.1
33	Failing to pick up passengers at bus stop	70	66	*0.1*	66	66	0.1
34	Admitting/carrying more passengers	84	50	*0.1*	48	55	0.1
35	Driving under disqualification	65	65	*0.1*	68	33	0.1
36	Leaving engine 'On' while stationary	22	81	*0.0*	28	156	0.1
37	Wearing Full Face protective helmet when not riding motorcycle/autocycle	4	34	-	34	19	-
TOTAL		123,372	115,558	*100*	129,611	80,070	*100*

Source: NAO Analysis on Data published by Statistics Mauritius

C.3 Enforcement through Prosecution and Administration of sanctions

Prosecution involves the institution of legal proceedings against a suspected traffic offender. The prosecution procedure should ensure that the evidence against the suspected offender satisfies the legal requirements and ensure that the suspected offender is appropriately notified of the proceedings, sanctions and associated rights. Sanctions generally include monetary fines, temporary driving ban, rehabilitation programs, licence withdrawal, and prison sentence.

Efficiency and swiftness of the prosecution processes affect the effectiveness of enforcement. Efficiency means that prosecution proceedings take as little time as possible from the police, Courts, and offender while maintaining soundness of procedure. The lapse of time between initial notification of offence and sanction is important from a psychological point of view. As per psychological learning and conditioning theories, punishment is more effective in changing behaviour when punishment follows swiftly upon the behaviour which violated the traffic laws[35].

Paragraphs C.3.1 examines the prosecution process from the point of capture of the offence up to the payment of fines (for fixed penalty offences) or up to lodging of contravention cases at the District Courts. Paragraph C.3.2 examines the Court processes of the lodged cases up to administration of the sanctions and disposal of the cases.

C.3.1 Efficiency of the Prosecution process

Traffic offences are sanctioned through Fixed Penalty System (FPS) or Court judgement. The FPS provides for a shorter time frame for the payment of the fines and the amounts had already been defined. If appropriately complied with, the system was expected to decrease administrative costs of handling offences, increase efficiency in handling contravention cases and ensure swiftness of prosecution process. The overall effect being a valuable deterrent to irresponsible conduct of drivers.

C.3.1.1 Aspects of efficiency and effectiveness of the Fixed Penalty System

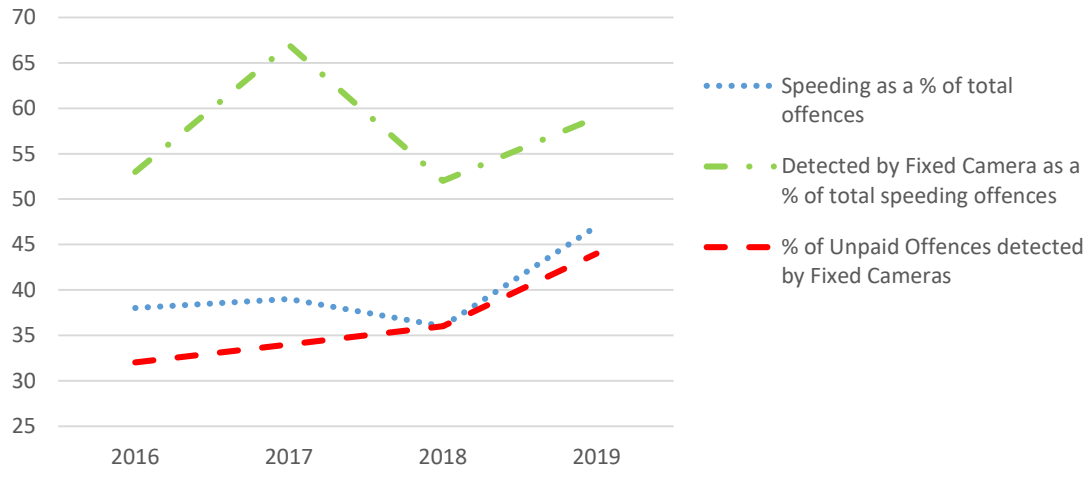
Some 40 percent of all contraventions established during period 2016-2019 related to speeding offences, established by handheld devices and Fixed Cameras of the Photographic Enforcement Device Unit (PEDU). The proportion of speeding offences were on the increasing trend since 2016. On average, for every ten speeding contraventions established, six were affected through Fixed Cameras. This indicated that even when drivers were aware that speeding offences would be detected, nevertheless the offences were committed, in

[35]The ''Escape Project''- Legal and administrative measures to support measures to support police enforcement of traffic rules- June 2000, funded by the European Commission.

contrast to handheld devices where detections were generally unpredictable.

The proportion of unpaid fines in each year had been increasing since 2016. It was 32 percent in 2016 and reached some 44 percent in 2019. For every ten offenders booked in 2019, more than four were not paying the fines, and had to be prosecuted through Court. Figure 16 refers.

Figure 16 : Speeding as a percentage of total offences, percentage detected by fixed cameras and percentage unpaid during period 2016-2019



Source: NAO Analysis

Some 74,300 speed offences had not been paid, representing an estimated amount of some Rs 158 million. Table 17 refers.

Table 17 — **Speeding offences established by Fixed Cameras, number fines Paid/ Unpaid and amount Paid/Unpaid during 2016-2019**

	2016	2017	2018	2019	Total
Number of Contraventions	45,366	62,662	45,526	47,935	201,489
Number of fines Paid	30,654	40,940	28,938	26,655	127,187
Amount Paid (Rs million)	38.3	51.1	57.7	100.1	247.2
Number of fines Unpaid	14,712	21,722	16,588	21,280	74,302
Amount Unpaid (Rs million) *Estimates of NAO*	*18*	*27*	*33*	*80*	*158*

Source: Police Service Records

The proportion of unpaid fines in respect of speeding offences established by handheld devices was not computed by the Police Service. The reasons for unpaid fines are elaborated in the next paragraph.

C.3.1.2 Non-payment of speeding fines for offences established by fixed cameras

Once a vehicle has been identified to have exceeded the speed limit as intercepted by a fixed camera, the PEDU had 14 days to issue a Photographic Enforcement Device Notice (PEDN) to the owner of the vehicle. The PEDN was sent by registered post on the address of the owner, as recorded in the database of the NLTA, to which the PEDU had online access. The Owner of the vehicle has to pay the specified fine within 21 days of the issue of the PEDN in case he or she was the driver at the time of the offence. The fine must be paid at the District Court specified in the notice.

In case he or she was not the driver or owner of the vehicles, there was a 14-day period to inform the PEDU by filling Part B and sending same back. On receiving Part B, the PEDU had 14 days to send a fresh PEDN and summon the new owner or driver to pay the fines within 21 days. On receiving a payment, the District Court Officer had 14 days to send details of the payment to the PEDU. The PEDU reconciled all notices sent and payment received.

If the owner or driver failed to pay the fine within the specified period, he or she was presumed to have been the driver of the vehicle at the time of offence. Criminal proceeding was initiated by the PEDU by preparing a case file and sending same to the police station responsible for the area where the offence had been committed.

The following reasons for non-payment of the fines were ascertained from PEDU personnel during site visits:

- The PEDN had been sent through registered post on the correct address of the owner/ driver and receipt of same was acknowledged as per receiver's signature on the documents of Mauritius Post (this acknowledgement is not sent to PEDU as confirmation of delivery).

- The owner/driver refused receipt of the notice, and same was returned to the PEDU.

- Though sent to the correct address, the receipt of the PEDN was acknowledged by somebody on the premises at that address. The Mauritius Post system recorded a signature of the person receiving the notice, without any obligation to confirm the identity of the receiver. The owner/ driver subsequently during prosecution, could claim that they never received the PEDN, or has it been misplaced or was lost.

- The ownership of the vehicle had been changed and same had not been updated in the NLTA database.

- The owner/driver has gone abroad or was untraceable.

Daily, the PEDU scrutinised several hundred pictures from the 67 fixed cameras and

established more than 100 confirmed speeding offences (some 4,000 monthly). This was achieved by a team of twelve police personnel with an annual emolument cost of some Rs 6 million. The changes in ownerships of vehicles which were not timely updated by the NLTA added unnecessary administrative tasks to the PEDU and decreased the efficiency of the Unit. Case Study 2 describes the tasks that were within the mandate and ownership transfers acknowledged by NLTA but were not followed up appropriately.

Case Study 2: Impact of National Land Transport Authority (NLTA) not updating its database on establishment of road traffic offences

The Photographic Enforcement Device Unit (PEDU) of the Police Service Traffic Branch is responsible for the management of speed violations captured by fixed speed cameras. The enforcement of the relevant legislation relies critically on the precise identification of owners/ drivers of vehicles exceeding speed limits as captured by the cameras.

The PEDU had to trace actual owners of vehicles violating the speed regulations in cases where vehicles sales had been affected and same were not reflected in NLTA's computerised system. The PEDU remotely extracted details from the NLTA computerised system and sent notices to these 'owners' which were no longer accountable for these violations following the sales. The PEDU had to record statements from previous owners and identify the new owners on its own to raise amended notices.

This required extra time and resources to send the amended notices to the new owners (not recorded on NLTA computerised system) within the regulated time frame. This was a recurring issue during the period examined and was affecting the efficiency and effectiveness of the PEDU. Though the NLTA's was apprised of this issue by the PEDU, no corrective actions were initiated.

A sample of such cases for the months November- December 2020 was referred to NLTA by the Audit team in February 2021. In these cases, 'Joint Notification of Sale' were issued. NLTA had already recorded the sales and had to ensure that a transfer of ownership was followed within the prescribed time frame as per the Road Traffic Act. Any party failing to comply with this Act was liable to a fine not exceeding Rs 10,000 and a seal may be affixed on the motor vehicle.

NLTA argued that follow up on the transfers of ownership was not its responsibility despite being involved in the collection of registration fees upon transfer which is within its mandate.

The next paragraph describes the processing of contravention files in respect of fines not paid under the FPS and those which do not fall under the FPS at police stations level.

C.3.1.3 Processing of contravention case files at Police Stations level

As of December 2020, there were some 78 police stations. These police stations were involved in handling case files for road traffic offences and were organised under seven Divisions. In addition to road traffic offences, personnel of these stations handled offences relating to crimes, misdemeanours, drug offences, contraventions established by the Police du Tourisme, Police de L'Environment etc. The total offences reported, including contraventions and road traffic offences in the seven divisions are as per Table 18.

Table 18	**Contraventions and Road Traffic Offences as proportions of Total Offences reported in Police Divisions during 2016-2019**						
Police Divisions & Other Units	Year				Total Contra-ventions	Total Offences[1]	%
	2016	2017	2018	2019			
Northern	34,819	45,449	47,147	20,316	147,731	184,928	*80*
Western	36,300	26,927	44,421	35,126	142,774	170,269	*84*
Eastern	30,835	28,117	32,942	22,518	114,412	141,746	*81*
Central	34,051	24,257	25,856	13,333	97,497	112,155	*87*
Metro South	17,131	21,988	25,593	24,325	89,037	101,232	*88*
Southern	27,769	22,403	17,301	9,982	77,455	101,266	*76*
Metro North	12,971	15,853	13,724	8,616	51,164	68,772	*74*
Other Units	2,492	2,098	2,139	2,483	[1]Total Offences comprise crimes, misdemeanours, drug trafficking etc. [2]Contraventions comprise Road Traffic Offences and other infringements related to environment, tourism etc. Figures were extracted from Digest of Statistics Mauritius.		
Fixed cameras	45,366	62,662	45,526	47,935			
Total contraventions[2]	241,734	249,754	254,649	184,634			
of which Road Traffic Offences	*228,189*	*235,994*	*239,494*	*173,589*			
Percentage of Road Traffic Offences	*94*	*94*	*94*	*94*			
Source: NAO Analysis							

Contraventions accounted for more than 70 percent of offences reported in the Police Divisions, out of which 94 percent related to road traffic offences. This meant that at least seven offences reported across the police stations of the island, were violations of the Road Traffic Act. As discussed in paragraph C.2.2, police resources had to be allocated among several competing priorities.

As of 30 June 2018, NAO reported that the Police Service had some 210,000 contravention cases in respect of which enquiries were yet to be completed. These included some 92,500 cases which related to the period 2011-2016, some 44 percent of the total cases. Also, in five police stations entries in respect of some 13,000 contraventions were not yet recorded (out of which 1,600 and 4,300 related to offences committed in 2016 and 2017

respectively). There were several challenges encountered to clear the cases such as availability of police resources, cases more than five years old with missing information and offenders untraceable. Since then, the Police Service has constituted special teams in several divisions and cleared part of the backlog.

During visits to the Central and Western Divisions, NAO was apprised of the prevailing backlog of the road traffic contraventions that had to be cleared in addition to those raised during the year. Case study 3 describes the challenges encountered by the Police, the status on the backlogs and structural problems in the system that perpetuated the backlog.

Case Study 3: Backlogs of Contravention cases at Western Division

During visits to the Prosecuting Unit (Rose Hill District Court) and Rose Hill Police Station of the Western Division the following recurring issue were identified:

- *This police station handled contraventions established by different units for road traffic offences committed in its station area. These included those by the DSU, ERS, ERS Transport Squad, RSU in addition to those raised by station personnel. Case files were raised for offences both under and those not under the Fixed Penalty System- ranging from those with high impact on road safety (like drink driving) to offences with negligible impact. Cases with negligible impacts, were numerous (as described in paragraph C.2.4) and diverted resources towards carrying out related enquiries, finalise cases and submit to Prosecution Unit.*

- *For Fixed Penalty cases, the confirmation of the payment by the offenders at the Court cashier's office was a tedious process. There was a considerable time lag between the date an offence was committed, confirmation of payment, opening of file for enquiry and carrying out same.*

- *As of December 2020, the Rose Hill police station had the following number of contravention cases in respect of which enquiries had yet to be carried out.*

Year	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*Total*
Number	*970*	*5,973*	*4,176*	*6,395*	*5,162*	*1,887*	*24,563*

It excluded cases which had been struck out by the Rose Hill District Court, which require re-investigations. These files were stacked, total number not ascertained and had to be attended in relation to availability of resources.

- *The Western Division had 14 police stations under its purview and as of December 2020, there were some 51,000 cases awaiting completion of inquiry and submission of same for prosecution. Some 60 percent of the cases related to offences committed more than two years ago.*

Year	*2013 -2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*Total*
Number	*2,275*	*7,928*	*7,113*	*13,309*	*12,659*	*8,543*	*51,827*

- *On average, some 35,000 contravention offences were reported annually in these polices stations during period 2016 to 2019. Case files in respect of 25 percent of these contraventions could not be completed within the same year and were carried forward as backlog to be cleared out.*

On average, some 180,000 contravention offences were reported at the police stations of the eight divisions (some 94 percent of which were road traffic offences) during 2016-2019. In June 2018, there were backlog of some 210,000 cases and as of January 2021 there were some 185,000 outstanding. This represented a full year workload that had to be carried forward as backlog and comprised several thousands of cases with offences detected more than two years ago.

C.3.1.4 Processing of case files at Police Prosecutors Office level

There were 11 Prosecutors Offices (PO) across the island staffed with some 250 personnel and each under the responsibility of a Prosecutor of the rank of Police Inspector. Each PO was involved in reviewing case files, ensuring they were complete with the necessary information and lodging the cases at the respective District Court. Once the date of hearing for an offence committed was fixed in respect of a case, the PO arranged to inform the offender and witness(es) to attend Court. The Prosecutor led the prosecution during the hearing before the Sitting Magistrate, acted upon the judgement and made the follow up on implementation of the sanction(s).

In June 2018, NAO reported that there were some 22,100 contravention cases outstanding at the Prosecutor's Offices (POs), out of which 4,500 cases were already processed but could not be lodged at the District Courts. During January 2021, a survey was carried across the 11 POs in respect of contravention case files handled during period 2018 to 2020, and the information collected is shown in Table 19.

Table 19 Number of Contravention cases lodged, struck out and closing balance at Prosecutor's Offices

	Years			
Number of Case Files	**2018**	**2019**	**2020**	**Total**
Lodged during year	64,542	66,204	55,140	185,886
Struck -out during year *(figures not available for 1 PO)*	12,995	17,956	8,604	39,555
Balance in hand at December *(figures not available for 2 POs)*	28,358	32,990	35,312	
More than 3 years *(figures not available for 4 POs)*	2,921	4,014	3,839	

Source: NAO Analysis

An average of some 62,000 contravention cases were lodged annually, and some 31,000 on average (50 percent of lodged cases) remained in balance at year end (comprising those that were already processed but could not be lodged and those were being processed). At least 10 percent of the cases remaining in balance at each year end related to offences detected more than 3 years back. A total of 39, 555 cases were struck out during the period, meaning that at least one case was struck out of five cases lodged.

(i) Lodged and outstanding cases

Meetings were held with the Prosecuting Officers during site visits at four of the POs and the following constraints were identified in respect of lodged and outstanding cases.:

- Each District Court had a limit on the number of cases that can be scheduled for hearing before the District Magistrate during a year. That included a mix of cases: crime, misdemeanour, contraventions, drug offences etc. A Prosecuting Officer had to strike a balance among the types of offences to be lodged at regular intervals during a given year. That explained the outstanding cases, completed but not yet lodged.

- The lockdown during period March-May 2020, reduced the number of case files that could be lodged during the year. This called for special arrangements with some District Courts by Prosecuting Officers (like that of Curepipe Prosecuting Office) to maximise the number of lodged cases.

(ii) Main reasons for Struck-out Cases

As regards struck-out cases, the main reason was that offenders were repeatedly absent during the scheduled Court sessions. These cases were then referred to concerned police stations for renewed enquiries. From information gathered at the POs, struck-out cases were of recurring nature due to the following reasons:

- Once a case has been lodged and a date fixed for hearing, the offender was informed by the PO through registered post, details of the hearing on Police Form 101. The Police Form 101 is a Notice in lieu of Summon, not a Summon from the Court. A plead by guilty letter is also enclosed in the correspondence as per address in the case file. The offender may attend Court or plead guilty by letter and pay the appropriate fine. In the case PEDN, the offender may decline receipt of the letter from the postal service or receive the letter personally or by somebody on his behalf, ignore it and not attend Court.

- During hearing of the case, the police officer who booked the offence would attend as witness. In the absence of the offender, the case is scheduled for another date and the Sitting Magistrate instructs the PO for police to warn personally the offender.

The PO instructs the police personnel of the relevant police station who processed the case file to warn the offender personally some two weeks before the scheduled date to attend the hearing, through PF 42. The police personnel need to warn the offender personally and that requires physical displacement to his or her declared/ recorded address, in compliance with PF 42, 'Memo to Warn'. The 'Certificate' part of the PF 42 filled and signed by the police personnel, testifies that the Offender has been warned personally, and any failure to attend may be sanctioned by a Warrant of Arrest. The 'Acknowledgment' part is filled and signed

by the Offender and confirms that his or her personal attendance will be required, and failure to attend might be sanctioned by a Warrant of Arrest. The instructions as per the Memo to Warn' can only be executed if the offender is contacted personally. As per information gathered at POs, the following were the main reasons why the Memo could not be served personally:

- the address was incorrect or the offender has shifted to other place of residence or abroad.

- the address was correct, but the offender was not available on the premises. Even if police personnel informed other occupant (s) of the premises present at that material time to warn the offender of the timing of the Court hearing, this was not counted as a being warned 'personally'.

- the offender was on the premises but did not attend to the call of police personnel who made same while being outside the premises. Even if police personnel suspected that the offender was inside the premises, police personnel could not enter the private property without permission of the offender or a warrant. The recourse to warrants for entering private premises to warn offenders of the need to be in attendance in Court for road traffic offences was not the practice of the Police Service.

(iii) Ascertaining addresses of Offenders as a major challenge

Except for offences established by the PEDU, police personnel relied on the address declared by an offender at time of interception for an offence. For example, if an offender was booked for speeding with a hand-held device, the police personnel did not have at that material time documentary evidence in respect of the address of the offender. The driving licence of the offender or other accompanying document (road tax, insurance vignette) did not have details of the address of the offender.

Except for offences like drink driving, where the offender is put in a 'Cellule de Degrisement'[36] the address is ascertained when the next of kin was informed. The address was sourced from records of the Traffic Branch when a case file was prepared for non-payment of fixed penalty or other offences. The Traffic Branch had the registered address of the offender when the driving license was issued, and that might date several years before the date of the offence, and not necessarily up to date. In cases where the offender was untraceable, police could not access the information available at public utilities entities, social security services or the register of electors of the Electoral Commissioners in support.

[36] Room in a police station to detain temporarily a person under the influence of alcohol.

(iv) Disposal of Struck-out Cases and estimated associated cost

All the struck-out cases were returned to the respective police stations for enquiry again to trace out the offenders. These struck-out cases were not included in the outstanding 185,000 cases mentioned above, and no inventory of same was kept across all the seven Divisions. We were informed that inquiries were carried out in specific cases like drink driving, but these accounted for a negligible portion of struck-out cases. Such cases were reported to be given priority both at the Prosecutor Offices and police station levels to trace the offenders.

Struck-out cases consumed resources since detection up to disposal, and can be grouped in six stages as follows:

i. Detection requiring police personnel, equipment & accessories (speed cameras, handheld devices) and vehicles;

ii. Processing of case files at police station level;

iii. Processing of case files at Prosecutors Office;

iv. First hearing requiring District Court level;

v. Second hearing, following 'Police to Warn', and

vi. Third hearing, following 'Police to Warn'.

If a notional cost of Rs 500 is associated with each stage, then a struck-out case has cost some Rs 3,000 in return for which no benefit has been realised. Out of the 39,755 contravention cases struck-out, some 37,000 related to road traffic offences. This represented an estimated of at least Rs 100 million which were consumed during detection, prosecution and Court proceedings.

C.3.2 Sanctions through District Courts

Sanction is more effective in changing behaviour when punishment follows swiftly upon the behaviour which violated the traffic laws. Paragraph C.3.1 described how the efficiency of the prosecution process was negatively impacted by delays in processing the case files and lodging same to initiate Court proceedings. The following paragraph examines the extent to which the Court sanctions followed swiftly once the cases were lodged.

On average during period 2016-2019, the Districts Courts[37] disposed annually some 97,000 cases and had some 24,000 cases outstanding in respect of criminal cases. Some 62,000

[37] As per Digest of Crime, Justice and Security Statistics published by Statistics Mauritius. Figures for contravention cases were not available.

contravention cases were lodged annually during the past three years and the number of convicted of offences are as per Appendix VIII.

In April 2018, the Ministry announced the establishment of a Traffic Offence Court for the expedient settling of traffic offences because it took 2 to 3 years between the detection of an offence and the appearance of the offender in Court. Since then, no actions were initiated either to set up the Traffic Offence Court or explore the possibilities of reducing the time span for offences which had the highest incidence on road crashes and severity of injuries. For example, given the limit on the number of contravention cases that could be lodged at the Courts, the lodging and hearing of such offences could have been prioritised.

An analysis of the detection and conviction trend of such two offences, drink driving and speeding, are discussed as follows:

- The number of drink-driving offences and number of convictions are presented in Table 20. The number of contraventions were almost twice the number of convictions.

Table 20	**'Driving motor vehicle with alcohol concentration above prescribed limit' – number of contraventions raised and convictions in Court during 2015-2019**					
	Year					
	2015	2016	2017	2018	2019	Average
Convictions	1,175	948	1,099	1,014	917	1,030
Contraventions	1,927	2,012	1,973	1,997	1,757	1,933

Source: NAO Analysis

- As speeding offences were under the fixed penalty system, only those unpaid were referred for prosecution. Details in respect of only unpaid speeding offences raised through PEDN were available. These were matched against convictions in District Court for the period 2014-2019. Table 21 refers.

Table 21	**Speeding contraventions raised and convictions in District Court during 2015-2019**						
	Year						
	2014	2015	2016	2017	2018	2019	Average
Convictions	3,169	2,322	4,827	3,914	4,310	5,910	4,075
Contraventions	36,542	5,836	14,172	21,722	16,588	21,280	19,356

Source: NAO Analysis

The number of unpaid speeding contraventions was four times more than could be disposed in District Courts annually.

The number of convictions in Courts could not keep pace with the number of offences detected. This impacted negatively on the swiftness of applying sanctions to offenders in order to improve behaviour towards compliance with traffic laws.

SECTION D

Ensuring Safe Vehicles on Roads

Key findings

- *As of March 2021, there was no consolidated and finalised guideline circularised among the VECs and NLTA personnel to ascertain that tests and fitness certificates were carried out and issued in a harmonised way to ascertain roadworthy vehicles on public roads.*
- *One issue which had not been addressed effectively was irregularities reported in respect of vehicles issued with Certificates of Fitness by VEC but found not to be roadworthy once outside the VEC premises through surprise checks by officers of the NLTAs.*
- *There were at least at least some 10,000 vehicles that had to be fitted with properly functioning speed limiters to ensure that they were safely driven within prescribed speed limits. The NLTA did not ensure effective compliance to this legal requirement during fitness controls to enhance road safety.*
- *The possibility of including chips or other alternatives in the motorcycles to improve the detection of auto/motor cycles for exceeding speed limits was not yet considered.*
- *The drafting of regulation 'Road Traffic (Total Loss) Regulations' was initiated in 2016 to impose an obligation on concerned parties to report cases of total loss to the competent authorities. As of March 2021, the regulation had not yet been finalised. The objective of preventing access of unsafe vehicles on public roads was not achieved.*
- *In its September 2019 report, the PAC recommended that all policy matters pending at the level of the Ministry in respect of VECs and relating to fitness control of autocycles and Government vehicles had to be finalised as soon as possible. However, these issues were still outstanding as of March 2021.*
- *The Enforcement Section did not keep records of the number of vehicles inspected nor analysed the types and significance of the defects identified. In the absence of these data and analysis, the NLTA could not have ensured that the roadside checks were targeting the appropriate number of vehicles, with focus on specific safety aspects.*

D.1 Introduction

The prevention of road accidents requires actions on each element of the road traffic system including safe vehicles. To ensure safe vehicles on public roads, regular monitoring of their road worthiness was effected through mandatory fitness control, which falls under the purview of the NLTA. A vehicle had to undergo periodical inspections as required under the Road Traffic Act prior to the renewal of its certificate of fitness and motor vehicle licence.

In order to meet international norms, the fitness control system was overhauled in 2016 through the outsourcing of the tests to three private Vehicle Examination Centres (VECs). Objectivity in vehicular assessment was expected to be achieved through the use of automated and computerised systems in these VECs. Some 20,000 fitness certificates were delivered by these VECs monthly. The NLTA is responsible for all regulatory and enforcement activities under this new arrangement, to ensure that vehicles conform to road safety norms.

This Section examines whether there were adequate regulatory, monitoring, evaluation, and enforcement activities by the NLTA to ensure that all vehicles on public roads were duly certified as roadworthy through appropriate fitness control system.

Findings have been organised in the following paragraphs:

- *D.2 Regulatory activities of NLTA at VECs*
- *D.3 Monitoring and evaluation of the vehicle examination centres*
- *D.4 Specific issues impacting safety of vehicles*
- *D.5 Enforcement activities of NLTA*

D.2 Regulatory activities of NLTA at Vehicle Examination Centres

The requirements of the new fitness control system were defined in an Expression of Interest (EOI) document at the time of selection of service providers for operating the VECs. Box 1 below refers. This was later supplemented by a Technical Guideline (TG) and Circulars to regulate examination of motor vehicles and trailers. The following paragraphs present audit findings in respect of their compliance and adequacy towards certifying roadworthy vehicles.

Box 1: Relevant Extracts of the Expression of Interest

- *'the motor vehicle examination line shall be an automated system that controls different testers, compares the tester measurements with applicable criteria, makes pass/fail determination from the comparison result and prints the measurements and examination results on a specified data sheet. Measurements of the examination testers will be connected online to a computer….'*

- *'The various stages for the examination line envisaged shall be as follows, but not limited to same:*
  - *vehicle identity and above-carriage check;*
  - *alignment (side slip) and brake tests;*
  - *braking, headlight and emission tests' and*
  - *under-carriage examination……'*

- *'Individual computerised test equipment at each stage shall be integrated to a system controller. The test data shall be automatically collated by each system controller….'*

- *'There shall be provision for the results of items that are examined manually to be integrated with the results of examination carried out by other test equipment…..'*

- *'For an integrated test line, the system controller shall control and co-ordinate the various examination processes along the examination lane. It shall also integrate test data of various examinations carried out for the vehicle before communicating them for storage in a host computer. There shall be provision for easy setting/selecting judgmental values for pass/ fail and classification of major/minor failures…..'*

D.2.1 Compliance with Technical Guideline and Circulars at the VECs

The Technical Guideline was first issued in October 2014 and provided for vehicle examination in compliance with the Road Traffic Act, related regulations and policies. It specified the inspection process to be followed by VECs and the requirements that a vehicle must satisfy before obtaining a Certificate of Fitness. Its objective was to provide comprehensive information to enable vehicle testers to perform tests in a systematic and consistent manner across all VECs. It could also be used as a training tool and reference document and was prepared with the contribution of VECs.

During sites visits, the processes at the three VECs were assessed as per the TG and Circulars. The findings are as follows:

- As of March 2021, the TG submitted to Audit was still a draft version, that is,

Version 3.0 of October 2016 which had not been updated with the amendments from Road Traffic (Amendment) Act 2016 and the Road Traffic (Examination of Motor Vehicles and Trailers) Regulations 2016. The values and parameters of testing equipment, which determined pass or failure of a test, were not included in this draft TG. In a meeting held in April 2019, the authorised examiners (VEC's management) averred that they had only obtained the draft version of the technical guideline. During site visits to the VECs, it was noted that they were still using TG Version 2.0 of June 2016.

- Two technical terms which were subject to different interpretations by VECs were 'major defect' and 'minor defect. The Road Traffic (Amendment) Act 2016 defined defect as a vehicle which 'is in such a state of disrepair as to constitute a danger to any person conveyed in it or to other users of the road'. It does not specify the difference between minor or major defect. The assessment of the defect rests upon the authorised examiner. They were not defined in the TG but were explained in a circular dated 26 September 2016 (Ref NTA 17/3) from the Examination Section of the NLTA. The Circular defined 'major' and 'minor' defects as follows:

    i. Major defects are those which are detected when examination is under automated system', and

    ii. Minor defects are those which are not hazards whilst the vehicle was on public roads.

    Automated system included Side Slip Tester, Shock Absorber Tester, Brake Roller Tester. Failure of Side Slip test in one VEC was considered as a major failure and no fitness certificate was issued, while in another one the fitness certificate was issued even when the vehicle failed this test.

- The 'Fitting of Speed Limiter to Motor Vehicle' was another area where the managers of VECs were not aware of the relevant NLTA Circular 17/3 of 29 June 2012. Fitness certificates were provided to vehicles even when they did not comply with the requirements (described in detail in paragraph D.4.1).

As of March 2021, there was no consolidated and finalised guideline circularised among the VECs and NLTA personnel to ensure that tests and fitness certificates were carried out and issued in a harmonised way to ensure roadworthy vehicles on public roads.

D.2.2 Implementation of Guidelines and Circulars into automated processes at VECs

The requirements which the automated processes should satisfy were defined in the EOI, and relevant extracts are as per Box 1. In all the three VECs, visual inspection tests carried out were integrated in the system in two different ways:

- At VEC 1 and VEC 2, the checklists of some 50 visual tests/ inspections were pre-loaded on handheld devices of testers. The checklist was derived from the TG. During the physical checks, a tester used the touchscreen to record the result of each of the 50 tests individually and any test which failed was logged in the re-test column of the inspection sheet. Remedial action had to be taken on the vehicle, and the vehicle must be re-tested for that defect before a fitness certificate was delivered.

- In contrast at VEC 3, the testers had no such checklist (manual or digital) which accompanied their inspections. It was observed that at the end of the visual /physical inspection, the tester accessed the computer system from a fixed terminal and input the defects noted visually.

As sample fitness tests were not accompanied by a vehicle examination list, it could not be confirmed during the site visit whether the VEC was using the same checklist and adequate supervisory control were exercised on the visual test, as recommended in the TG and EOI.

D.2.3 Supervision of VECs by NLTA

The NLTA personnel supervising the processes involving the multi-stage integrated computerised systems confirmed to audit that they have not obtained any formal training on the systems since their operation in 2016. In 2019, the Council had recommended that training be provided to vehicle examiners personnel of the NLTA, following the overhaul of the fitness control system and the privatisation of testing. The preparation of a terms of reference for the training course and associated draft regulation were initiated. However, in September 2020 the training was put on hold as funds were not budgeted for.

A security protocol, including infrastructural and information technology (IT) issues, was formulated by the NLTA in June 2017 for implementation by the VECs. The IT protocol covered aspects such as transmission of data, validation of results, traceability of testers, physical and logical controls (i.e passwords), data security, encryption and back up. Also, there was a requirement in the IT protocol that when payment for a test was recorded in the system, the software should automatically allocate the lane on which the vehicle would be tested. However, at VEC 3, it was noted that the allocation of lane was decided manually by the security personnel.

During a walkthrough of the three different systems of the VECs the following features were noted: there were several users and interfaces within each system, interfaces with the NLTA database and sharing of information across different systems. Good practices[38] recommend independent information system audit to ensure integrity and security of a

38

computerised system. For example, it was important to ensure that only authorised personnel had access to the system to prevent the issue of unauthorised fitness certificates for non-roadworthy vehicles.

The VECs had not carried out such audits, and the NLTA had not ensured that the recommended IT protocols of June 2017 were being complied with.

D.3 Monitoring and evaluation of VECs by NLTA

A letter of comfort was signed in June 2016 with the three operators of the VECs in lieu of a contract. One of the terms of the contract was that 'NTA shall set up a Monitoring Committee which will meet quarterly or earlier so as to monitor, control and regulate the operations of the VECs'. The Public Accounts Committee, in its Report of September 2018, recommended that an annual evaluation report be prepared by an independent auditor appointed by the NLTA to review the functioning of the private fitness centres to enhance transparency and accountability.

In April 2018, NLTA carried out an assessment on one of the VECs to evaluate its processes. As of March 2021, no follow-up had been carried on the outcome of this assessment, and similar exercises were not replicated at the other two VECs. During period 2018 to 2020, NLTA personnel posted at the VECs had submitted status reports on the operations, instead of evaluation reports.

As per Regulation 5(2) of the Road Traffic (Examination of motor vehicles and trailers) Act 2016, the renewal of the license of a VEC should be made after an investigation and inspection as required by the NLTA. The criterion for the renewal of the VECs licenses was based on the submission of calibration certificates of the equipment used in respective VECs.

One issue which had not been addressed effectively was irregularities reported in respect of vehicles issued with roadworthy certificates by the VEC but were immediately found not to be roadworthy once outside the VEC premises upon verifications by NLTAs officers[39] . There was a total of eleven reported cases over a three-month period (from 24 September 2020 to 18 December 2020) among all the three VECs. The outcome of the investigation and actions to reinforce controls by NLTA were still pending as of March 2021.

[39] *As per NLTA's and Sectoral Meetings records*

D.4 Specific issues impacting safety of vehicles

There were several issues impacting the safety of vehicles which had not been addressed effectively either through inadequate legislation or no proper mechanism to implement same or inadequate enforcement. They comprise safety issues related to speed limiters, compliance of motorcycle registration plates, vehicles considered as total loss, fitness control for auto/motor cycles and Government vehicles. All these issues fell within the ambit of the NLTA. How these issues were addressed by the NLTA are described in the paragraphs below.

D.4.1 Speed management through installation of Speed Limiters

The Strategy stressed that speed was an aggravating factor contributing to the severity of road crashes and was particularly responsible for most of the serious and fatal accidents. Heavy vehicles are a higher risk to road users than other vehicles if involved in a crash and good practices recommended installation of speed limiters in heavy vehicles and public service vehicles[40].

The Road Traffic (Construction and Use of Vehicle) Regulations 2010 make provision for the fitting of speed limiters in every bus and goods vehicles whose gross weight exceeds 3,500 kilograms and which are capable of a speed in excess of 70 kilometres per hour. As from July 2012, all such vehicles had to be fitted with speed limiters failing which no Fitness Certificates were to be issued. The NLTA issued a circular in July 2012, detailing out the requirements in respect of the speed limiters, and were as follows:

- The speed limiters should comply with BS AU 217 or equivalent standard (lists provided in the circular);

- the owner of the vehicle undergoing fitness test should produce a certificate from the supplier to the effect that the speed limiter has been pre-set to the maximum speed, and

- the speed limiter be seated in such a way that it cannot be removed or tampered with without the seal being broken.

Analysis of road crash data for the period 2016 to 2020 indicated that there were several fatal crashes involving heavy vehicles and public service vehicles. Preliminary investigations records of the Police Service indicated that these crashed vehicles had issues

[40] *Speed management: a road safety manual for decision-makers and practitioners. Geneva, Global Road Safety Partnership, 2008*

with speeding and brake failures. A sample from the list of heavy and public vehicles detected while speeding in excess of the authorised limit on the roads by Photographic Enforcement Device Unit was extracted. In many instances fixed cameras detected these vehicles moving in excess of 70 km per hour and up to 110 km per hour during the months of November and December 2020. Examination of their fitness certificates indicated that they complied with legal requirement of having been fitted with speed limiters at time of testing. The speed limiters installed on these vehicles were not functional at time the offences were committed.

The verifications carried out on speed limiters during fitness control at the VECs were assessed during visits to each VEC. Vehicles which were undergoing fitness control for speed limiters were observed and findings are as follows:

- As per the 'EOI', the VECs should have test equipment for Speed Limiters. None of the VEC had such equipment to confirm that speed limiters were functional.

- As per the regulations incorporated in the TG, a tester had to check if 'the indicator is connected, and whether the light was on'. No light was observed during the inspections to confirm whether the speed limiter was functional.

- In several cases, testers could not identify the location of the speed limiter to check any tampering.

- Several certificates produced did not even mention to which standards the speed limiters complied with.

- The certificates produced had no validity periods nor indications when re-calibration was due as in several cases the equipment was installed since more than five years. In several cases the warranty period was three years or 150,000 km, whichever is the earlier, while in other cases no mention of same was made.

As of March 2021, there were at least at least some 10,000 vehicles that had to be fitted with properly functioning speed limiters to ensure that the prescribed limits were not exceeded. The NLTA did not ensure effective compliance with this legal requirement to enhance road safety.

D.4.2 Speed management - Non-compliance to regulations of registration plate of auto/motor cycles

In the NAO Report for year ended June 2018, it was pointed out that non-compliance of registration plates to regulations had an adverse impact on the achievement of the objectives of the Strategy. During 2017-2018, the PEDU captured some 34,800 images from speed

control cameras relating to speed violations by auto/motor cycles. Some 31,300 images were rejected of which, some 20,400 were for reasons, such as "*Rear Registration Plate not according to Law*", "*No Front Registration Plate*" and "*Registration Plate defaced*".

(i) Non-Compliance to Regulations

Auto/motor cyclists were not complying with Regulation 57 (f) of the Road Traffic (Construction and Use of Vehicles) Regulations 2010. It provides that 'a registration mark shall be displayed on a registration plate which shall not be treated in any other way which renders the characters of the registration mark less easily distinguishable to the eye or which would prevent or impair the making of a true photographic image of the plate through the medium of a camera and film or any other device.' Regulations 58 and 59, pertaining to size and spacing of characters on registration plate and layout of registration marks respectively, were not being complied with.

The Ministry replied that the Police Service enforced abidance to posted speed limits through the mobile radar system as well and it was unlikely that auto/motor cyclists would escape such crackdown operations. In addition, research was underway to see if chips could be introduced in the motorcycles.

(ii) Status as of 30 June 2020

For the 12- month ended 30 June 2020, some 77 percent (7,751 out of 10,008) of images captured by the PEDU were rejected as shown in Table 22. At least 7 out of 10 images rejected were due to no front registration plate detected by the fixed cameras. The PEDU explained that a fixed camera could capture a front registration plate only if it was vertically aligned on the chassis of auto/motor cycle. In the rejected cases for '*No front registration plate*', the registration numbers were either sticked horizontally on mudguards or were not clearly visible.

Table 22	Number of images captured, rejected , PEDN raised and paid for 12- month ended 30 June 2020	
Images Captured[41]		10,008
Rejections:		
Obstructed	744	
No front registration plate	6,011	
Unreadable – Rear Registration not according to law	659	
Registration plate defaced	337	
Total number of rejections		7,751
PEDN Served		2,257
Number of PEDN paid		1,213
Number of unpaid PEDN referred to Court		1,044
Source: Police Service		

Records examined at NLTA showed that the level of enforcement carried out in respect of non-compliance of the registration plates was low when compared to the number of rejected images. For example, in November and December 2019, the numbers of contraventions established for non-conformity of registration plates were 11 and 4 respectively. Some 46 percent of the contraventions established were not paid and referred for prosecution. As described in Section D, a significant number of these prosecuted cases for non-payment of PEDN was struck out.

As of March 2021, the possibility of including chips or other alternatives in the motorcycles to improve the detection of auto/motor cycle exceeding speed limits was not yet considered.

D.4.3 Control over vehicles considered as structural loss

In January 2016, the Council was apprised of the practice whereby vehicles damaged in road crashes and reported as total losses were being repaired and reintroduced in the traffic system, thus constituting a serious hazard, and impacted negatively on road safety. Insurance companies, the NLTA and the Police Service were requested to ensure that these vehicles were grounded, de-registered and put out of use.

According to Ministry's records[42], vehicles considered as total loss, particularly those which had structural damage could be sold to the public without any control/clearance from a competent authority. These vehicles could be repaired and reintroduced on public roads. VECs did not carry out tests (as confirmed during site visits) to identify any such

[41] *There was lockdown during period 20 March -30 May 2020*

[42] *Technical Report on official mission for setting up a depot for scrapped vehicles in Mauritius-2017*

structurally damaged vehicles during fitness control. As of December 2019, the NLTA had recorded only 59 vehicles as 'Structural Total Loss' in its database, though annually there were more than 20,000 accidents reported during period 2016 to 2019.

The drafting of regulation 'Road Traffic (Total Loss) Regulations' was initiated in 2016 to put obligation on concerned parties to report cases of total loss to the competent authorities. Also, the draft proposed the creation of an offence with heavy fine together with imprisonment, where a person has used or sold a vehicle which had been declared as technical or structural loss. The last input by the concerned parties on the draft was forwarded to the Ministry in February 2019.

As of March 2021, the draft regulations had not yet been finalised. The objective of preventing access of unsafe vehicles on public roads was not achieved.

D.4.4 Fitness control for autocycles and Government vehicles

The Road Traffic (examination of motor vehicles and trailers) Regulations 2016 made provision for the examination of autocycles. However, as of March 2021, autocycles had not yet been subject to a roadworthiness test. As of December 2020, there were some 118,000 autocycles of less than 50 cc registered at the NLTA. Road crash statistics, on this type of two-wheelers indicated that they were among the most vulnerable road users.

According to the Ministry, there had been a long-standing practice for Government-owned vehicles to be exempted from fitness tests, though the Road Traffic Act did not provide for such exemption. According to the new provisions of the Road Traffic (Amendment) Act 2016, all vehicles, whether Government owned or otherwise, had to be examined for the purpose of obtaining a certificate of fitness. As of March 2021, there were 2,583 Government-owned vehicles out of which 954 were above seven years. This age factor required them (37 percent of the fleet) to undergo roadworthiness tests. During the months of September and October 2019, NLTA carried out road worthiness test on a sample of 98 Government vehicles, out of which, 79 (some 80 percent) failed the roadworthiness test.

In its September 2019 report, the PAC recommended that all policy matters pending at the level of the Ministry in respect of VECs and relating to fitness control of autocycles and Government vehicles had to be finalised as soon as possible. However, these issues were still outstanding as of March 2021.

D.5 Enforcement activities of the NLTA

The Road Traffic (Amendment) Act 2016 empowers a police officer, vehicle examiner or road transport inspector to prohibit the use of a vehicle if it is not fit to be used on the road. The roadworthiness of a vehicle is assessed through a visual examination during roadside

checks.

Table 23 shows average number of notices issued, roadside checks and personnel allocated during enforcement activities for the year 2020.

Table 23	**Average monthly number of notices issued, roadside checks and officers allocated for enforcement during year 2020**
	Monthly Average (Number)*
Prohibition Notices Issued	80
Smoke notices issued	90
Roadside checks carried out	16
Officers allocated for enforcement	6 to 7
**excludes 2 months of lockdown period*	
Source: NAO Analysis	

Monthly, some 20,000 vehicles required fitness control during 2020 and were potentially subject to roadside checks. Daily, an average of three to four officers of the Examination Section were available to carry out roadside checks. These checks were carried out, in line with approved weekly plan. They included inspections triggered by reports and complaints and covered the whole of Mauritius. However, the Enforcement Section did not keep record of the number of vehicles inspected nor analysed the types and significance of the defects identified. In the absence of these data and analysis, the NLTA could not have ensured that the roadside checks were targeting the appropriate number of vehicles, with focus on specific safety aspects.

SECTION E

Promoting Safer Roads and Roadsides

Key findings

- *The PF 178 were not timely submitted by the Police Service to update the Road Crash Data Management System. As of March 2021, at least one third of PF 178 for period 2018-2019 were not submitted, while for 2020, some two-third was still outstanding.*
- *Neither during the Council nor the Sectoral meetings, discussions were engaged with the Police Service to identify and sort out effectively the constraints encountered by the latter to provide the remaining PF 178 dating as far back 2018 and 2019, in a timely manner.*
- *The Ministry associated insufficient funding with the significant amount of backlog on remedial works to treat hazardous locations. However, funds were annually underspent, leading to a total of some Rs 154 million unspent under the Capital Budget during the last four financial years. Besides, under the Recurrent Budget an annual amount of Rs 40 million were underspent.*
- *As of March 2021, the Ministry and the Council had not considered and addressed the need for adequate capacity building in terms of safe road design and national standard for road works among the concerned stakeholders.*
- *The Road Traffic Act Section 123 AL provides for the carrying of Road Safety Audits in respect of the construction of new roads, traffic centres and in the implementation of new traffic schemes. As of March 2021, the Ministry had not ascertained whether the Road Development Authority was carrying out independent Road Safety Audits on the first four stages of its road projects.*
- *The Ministry did not ensure that all Road Safety Audit Reports sent by the TMRSU were appropriately followed and the recommendations considered with a view to address the safety issues raised.*

E.1 Introduction

According to the Strategy, the quality of the road infrastructure in Mauritius had been a subject of controversy, when it was linked to the number and severity of road crashes and the behaviour of road users. Road crashes and behaviour of road users were usually attributed to the complexity of the road traffic system and poor maintenance of road furniture and infrastructure. However, it was difficult to determine the contribution of poor road conditions in road crashes as reliable data on this matter were not available for analysis. It was estimated that road infrastructural problems might be contributing to some 25 percent of the road crashes.

Under the Safe System Approach, systematic analysis of road infrastructures (followed by identification and corrective actions) has produced the desired results towards improving

road safety. The Strategy recommended several methods to improve the road network to achieve road safety results.

Findings have been organised as follows in the following paragraphs:

- *E.2* Collection and analysis of Road Crashes Data;
- *E.3* Hazardous Road Location Program*;*
- *E.4* Safe road design;
- *E.5* Road safety audits.

E.2 Collection and analysis of Road Crashes Data

Analysis and interpretation of road crash data is central to any scientific approach to address road safety problem. A consistent and robust road crash database is vital to enforce traffic laws, build safer roads, promote safer behaviour by road users, and reduce incidence and severity of road crashes[43].

Annually some 30,000 road crashes are recorded on public roads out of which some 3,500 crashes involve bodily injuries and deaths. The rest are damage-only crashes. It is mandatory for drivers involved in injury crashes to report such crashes to the police. Police officers recorded the details of each crash on a pre-designed form (PF 178) which were then sent to the TMRSU where these data were input in a Microcomputer Accident Analysis Package (MAAP) software. The MAAP software produces an analysis of road accident data and a casualty crash database.

The road crash analysis data generated was helpful to the Police Service for example to direct enforcement in locations where unsafe behaviours were identified, leading to crashes. The TMRSU used the analysis to identify hazardous road locations and blackspots[44] across Mauritius (Appendix IX refers), analysed road safety problems and evaluated remedial measures. Statistics Mauritius used the data to release regular reports and statistics on Transport and Road Accidents.

The next paragraph examines whether the system of road crash data collection and analysis was functioning effectively to deliver the intended benefits.

[43] As per Ministry Records.

[44] In road safety management, a blackspot is a location where road traffic accidents have historically been concentrated.

E.2.1 Submission of PF 178 to update road crash database

In 2019, TMRSU reported that many PF 178 dating as back as 2013 contained incorrect data in respect of road crashes. For example, more than 3,000 cases of PF 178 with nil Global Positioning System (GPS) coordinates for the year 2016 were identified. These GPS coordinates were important to identify precisely where the crashes occurred on the roads, so that it could be included as a potentially hazardous location and mapped on to the road network in Mauritius (Map is as per Appendix IX). Police personnel reported that the portable GPS Mapping Tool provided in the year 2000 had become obsolete, hence location of crashes could not be identified. Consequently, TMRSU personnel had to call at individual crash locations for period 2016-2018 to retrieve the locations of accidents.

PF 178 were not timely submitted. Table 24 shows the number of PF 178 still outstanding as of March 2021. At least one third of PF 178 for period 2018-2019 was not submitted, while for 2020, some two-third was still outstanding.

Table 24 **Number of PF 178 not submitted during period 2018-2020 as of March 2021**

Year	No. of accidents	Number Submitted	Number not submitted	Percentage not submitted
2018	2,688	2,428	258	10
2019	2,739	1939	800	29
2020	2,086	644	1442	69

Source: NAO Analysis

The non-submission of the PF 178 had the following impact:

- In May 2019, the RDA had requested an updated list of blackspots to plan remedial works to be carried out at its end. However, same could not be provided as TMRSU had only the old list of 2011 which was based on the crash data of 2004 to 2009. To carry out a meaningful analysis, TMRSU required three to five years crash data but same were not available.

- A number of important statistics could not be prepared by Statistics Mauritius for years 2019 and 2020. These include seriousness of injury of casualties, types of vehicles and class of road users involved in accidents, and accidents involving 'hit and run' cases.

- As of March 2021, TMRSU was using monthly list of accidents provided by the Police Service on excel sheets to plan its road safety interventions, when instead software generated analysis were the requisites. The list contained basic information on accidents extracted manually from the Occurrence Books of police stations.

Neither during the Council nor the Sectoral meetings, were discussions engaged with the Police Service to identify and sort out effectively the constraints encountered by the latter to provide the remaining PF 178 dating as far back 2018 and 2019, in a timely manner.

E.2.2 Digitalisation of the collection of road crash data

In October 2017, Project iMAAP Road Crash Database Management System (iMAAP RCDMS) was initiated by the Ministry at a cost of some Rs 11.5 million. Under this project, the manual entry of road crash data on PF 178 was to be replaced by a digital version on a tablet. The exact location of the crash site would now be ascertained by using the GPS application pre-loaded on the tablet and all other details required to be filled in were same as in the manual system. Once collected and stored in the tablets and checked, the data was to be uploaded by police station personnel, using a WiFi connection, to the 'Government-On-Line' servers hosting the database. Any registered user (personnel of TMRSU, Police and Statistics Mauritius) would have access to the database by using a device on which the IMAAP RCDMS application had been installed.

The application component of the project had been installed and running since September 2018. In August 2019, 80 tablets costing some Rs 2 million were acquired, commissioned with the application and made available for use by personnel of police stations after appropriate training. This digitalised system was expected to be operational as from March 2020 and the following benefits would have been realised:

- elimination of paperwork relating to capture of crash data and delay in submission of the PF 178.

- tablet with pre-loaded software, GPS facility and connectivity would enable accuracy, consistency, completeness, integrity and timeliness in capture and transmission of road crash data.

However, as of March 2021, the system was not operational and road crash data was still being captured manually and not sent in a timely manner. The following reasons were reported:

- Refresher training on use of the tablets had to be carried in November 2020 and this delayed implementation of the digital system.

- Within five days of the occurrence of a road crash, the data had to be captured and uploaded on the database. There were issues relating to staffing at police stations which prevented the execution of these tasks.

- The data could not be uploaded due to some technical problem in the application software.

Implementation of this digitalised system was delayed by several issues, constraints and challenges encountered since September 2018 and which had not been adequately addressed during Council and Sectoral meetings.

E.2.3 Adequacy of road crash data

Since July 2004, damage-only crashes were reported directly to insurance companies as per the Agreed Statement of Facts (ASOF). For damage-only crashes where the ASOF system did not apply (for example crash involving several vehicles) , police personnel used form PF179 to record the relevant data. These data were kept by insurance companies, and a monthly return were sent to the TMRSU. The returns, representing some 90 percent of crashes, did not contain relevant details that could be used to update the iMAAP RCDMS. Even though these did not involve injuries, they represented at least 80 percent of annual road crashes, and could provide additional data on some of the serious ones. These data could be used to further update and enhance the database on hazardous road locations and blackspots.

As per the MRIC Report '*Investigating the causes of fatal accidents in Mauritius using discrete time series model*, several useful information was not being captured on the PF 178. These include information on:

- the latest fitness test passed by the vehicle(s) involved in a crash – this would provide the roadworthiness status of the vehicle(s).
- the number of street lighting poles near the accident – it would provide indication of the lighting conditions.
- the average speed of the vehicle at the time when the accident happened - this is one of the most important risk factors behind crashes.
- the presence of traffic devices near the accident areas – such as signage displaying.
- the maximum and minimum speed limits, speed cameras etc. This would indicate whether such devices were useful in preventing road crashes.

TMRSU agreed with the potential benefits of capturing such data, however, even if captured, they could not be incorporated in the iMAAP RCDMS at this stage.

E.3 Hazardous Road Location Program

Under the Hazardous Road Location Program of the Strategy, accident database would additionally be used to identify hazardous road segment. Then appropriate countermeasures would be used to treat these hazardous road segments.

Budgetary provisions for the Hazardous Road Relocation Programme fell under Capital Budget of the Strategy which also included expenditure on the following related components:

- Road Markings and traffic signs.
- Footpaths, walkways, drains and handrails.
- Crash barriers, hard shoulders and delineators.
- Traffic calming measures.
- Construction of bus laybys and shelters.

The amount budgeted and actual expenditure for the four financial years ended 30 June 2020 are shown in Table 25.

Table 25	**Budgetary Provisions and Actual Amounts spent during last four financial years ended 30 June 2020 in respect of the Strategy**				
	2016-17 (Rs m)	**2017-18 (Rs m)**	**2018-19 (Rs m)**	**2019-20 (Rs m)**	**Total (Rs m)**
Capital Budget					
Provision	200	200	200	200	800
Actual Expenditure	108	176	174	188	646
Underspent	92	24	26	12	154
Recurrent Budget*					
Provision	75	75	74	75	299
Actual Expenditure	22	48	34	25	129
Underspent	53	27	40	50	170

**Comprise expenditures on studies and surveys, awareness and sensitisation campaigns, training assistance, capacity building and consultancy fees.*

Source: NAO Analysis of Treasury Reports

In the 2017 SweRoad Road Safety Inspection Report, an amount of Rs 334 million was estimated to be required to address the hazardous segments along motorways, and certain specific A&B Roads. The Ministry budgeted some Rs 73 million for these expenses in financial years ended June 2019 and 2020 and intended to meet the remaining expenses in the next financial years.

As of April 2019, TMRSU produced a report on additional road improvement works in the Districts of Pamplemousses and Rivière du Rempart, based on crash data and in-depth inspections. The improvement works were estimated to cost some Rs 119 million, and addressed several defects like:

- unforgiving nature of roadsides.
- poor horizontal curve delineation.
- poor road signage and visibility.
- inadequate street lighting along roads and junctions causing night visibility problems.

Only some Rs 40 million and Rs 22 million were available in financial years 2019/20 and 2020-21 respectively for such works under budget items 'Road Markings and traffic signs' for the whole of Mauritius.

During site visits in the two districts, defects in respect of footpaths, walkways, drains and handrails, representing safety risks were common. For example, along 'A2' Road at Khoyratty with a Killed and Seriously Injured crash rate/ km/ year [45] of 0.49, there were safety issues with the pavement on one location. Figure 17 illustrates a pavement condition[46] where pedestrians have to swerve on the road to avoid obstruction and the damaged pathway and were exposed to oncoming vehicular traffic.

The Ministry associated insufficient funding with the significant amount of backlog on remedial works to treat hazardous locations. However, funds were annually underspent, leading to a total of some Rs 154 million unspent under the Capital Budget during the last four financial years. Besides, under the Recurrent Budget an annual amount of Rs 40 million were underspent.

[45] This measures the hazard index. The range in 2014 was 0.21 minimum and maximum 1.4.

[46] As per interviews carried out with local residents, the pavement has been in this condition for more than 10 years and was regularly used.

Figure 17 **Condition of footpath, exposing pedestrians to oncoming vehicular traffic**

Source: National Audit Office (photograph taken in February 2021)

E.4 Safe road design

The Strategy identified that the road design approach in Mauritius primarily catered for traffic mobility at the expense of safety. Henceforth, with the implementation of the Strategy, a safe system design approach will have to be embedded and adopted within the road design system. The safe system design, under the Safe System Approach, considers the limitations of the human body to absorb shocks during a crash and manages the exchange in kinetic energy[47] in a crash. This helps to minimise the severity of injury or damage. It recommended that the design of road infrastructure would start with the needs of the most vulnerable road users and then progress through, to the safety needs of the least vulnerable.

The Consultants, in their report of October 2017 on Road Safety Audits, (SweRoad) identified that there were no official highway design standards, guidelines or technical specifications in Mauritius. There was a proposal to develop one by the RDA, but it did not materialise. They recommended that road design guidelines should consider, among others, the following key aspects:

[47] A moving vehicle has energy, called kinetic energy, and this energy will be transferred into something else when it slows or is stopped during a crash. In a crash this energy is converted into destructive mechanical energy causing physical damage to the vehicle(s), occupant(s) and surrounding infrastructure.

- finding the appropriate balance between maximising traffic capacity and operational efficiency whilst ensuring safety.
- providing more forgiving [48]roadsides.
- controlling speeds and encouraging safe behaviour at junctions.
- giving priority to the needs of vulnerable road users.
- ensuring that signage and safety barrier are fully considered from the earliest design stages.

Also, there was a need to establish standards and guidelines for safety measures such as safety barrier, traffic calming and street furniture. One of the observations made was that though the RDA had always considered road safety during the design of road schemes, the design teams did not usually have specialist road safety experience.

The following paragraph assesses how safety aspects were embedded in projects.

E.4.1 Embedding of safety aspects at design stage of projects

In January 2021, a walk-through test was carried out on a sample of road projects to examine how the safety aspects were being embedded in the design process post publication of the abovementioned consultancy report, and the status on the formulation of a national standard for road construction and maintenance at the RDA. During meeting with RDA, it was explained that the formulation of a national standard was kept in abeyance. Also, it was stated that RDA had consistently adopted good practices, local and international standards[49], which they considered to have adequately catered for road safety aspects in their designs. Details provided for capacity building in respect of road safety aspects were as per Table 26.

[48] This is a concept that designs roads to "forgive" mistakes made on the road. It seeks to smoothly redirect the vehicles that leave roads and allow wide enough clear zones to bring vehicles to controlled stops if and when they leave the roads.

[49] These included: the American Association of State Highway and Transportation Officials (AASHTO) which are standards issued for design, construction of highways and bridges, materials, and many other technical areas / Design Manual for Roads and Bridges (DMRB), British Standard, UK.

Table 26	Details on Training, number of staff and duration in respect of road safety at the Road Development Authority		
Sn	**Details of Training**	**Number of staff**	**Duration of training**
1	National Consultative Workshop on Road Safety	5	One day in December 2015
2	Seminar on Road Safety	1	One day in May 2016
3	Training on Road Safety Audit by Consultants of SweRoad	6	One month in April 2017
4	Setting up of a Road Safety Observatory	2	Two days in May 2019
5	Stakeholders Meeting Road Safety Observatory	2	One day in October 2020

Source: RDA

The capacity building did not include training on design of road projects with emphasis on road safety aspects.

As of March 2021, the Ministry and the Council had not considered and addressed the need for adequate capacity building in terms of safe road design and national standard for road works among the concerned stakeholders.

The next paragraph describes the need for and follow up on recommendations road safety audits.

E.5 Road Safety Audits

A road safety audit (RSA) is a systematic and formal investigation of the safety performance of new and improved roads before they are built[50]. An RSA identifies safety issues and provides recommendations on how the design can be modified to eliminate or reduce safety problems. It plays a significant role in providing a road environment that is forgiving, self-explaining and catering for the needs of all road users. Given the predominance of pedestrians, motorcyclists and other vulnerable road users amongst the victims of road crashes in Mauritius, their safety needs require special attention in the RSAs.

The Road Traffic Act Section 123 AL provides for the carrying of RSAs in respect of the construction of new roads, traffic centres and in the implementation of new traffic schemes. Also, appropriate measures need to be taken to reduce the possibilities of accidents when these roads, traffic centres or schemes come into operation. The Strategy confirmed that henceforth the Ministry would carry out 'five stage Road Safety Audit' for all major new road projects and traffic schemes, including rehabilitation and upgrading works. The 'five stage Road Safety Audit' comprises the following stages: Feasibility, Preliminary Design,

[50] Final Report- Strengthening Road Safety Audit and Inspections Capacity by SweRoad 2017.

Detailed Design, Pre-opening and Post-opening.

E.5.1 Independent audits on first four stages of RSAs

Previously, the RSAs were being carried out at pre-opening stage only. In 2017, the SweRoad Consultants trained personnel of the TMRSU and RDA in RSA and prepared a related Draft Standard for carrying out same. The Draft Standard sets out the procedures required to implement RSA on road schemes, on motorways and main roads managed by the RDA. According to the Consultants, pre-opening audits were useful final checks on the details, but it was too late by then to rectify a fundamental safety problem. The greatest benefits come from auditing designs at an early stage – feasibility study and preliminary design. As of March 2021, the Standard was still at a draft stage. As per records, the RDA favoured RSAs at pre-opening stages only. According to RDA, a contractor was responsible to carry out independent RSAs during construction stages of a project under its responsibility. If TMRSU would be involved during construction phase and then carry out the final pre-opening stage, RDA argued that this might be viewed as conflict of interest.

The Ministry had to ensure compliance with the Section 123 AL and alignment with the Strategy in respect of five stage audit. However, as of March 2021 the Ministry had not ascertained that the RDA was carrying out independent RSAs on the first four stages of its road projects.

E.5.2 Follow up on final pre-opening stage RSAs

As of March 2021, 14 pre-opening RSAs had been carried out by TMRSU, following training delivered by SweRoad in 2017. A follow up on the action taken by RDA on these safety audit reports, as of March 2021, has been examined and the findings are as per Table 27.

Table 27	Follow up on RSA Reports by the Road Development Authority
No of Reports	**Findings**
1	Report in file, and actions taken as per recommendations
6	The Reports were in the individual project files at the RDA. However, there were no records in the files to confirm the actions taken up to address the safety issues raised.
3	The reports (dated August 2020, January 2021 and February 2021) sent by TMRSU were not in the files of RDA.
2	Projects (Round about along B59 at Sept Croisees, Trou d'Eau Douce of July 2019 and Radier St Martin on B9 of September 2018)- Letters were sent to respective project contractors for necessary actions as per Reports, but there were no records of follow up on any action taken
1	Project (La Croisette – Grand Baie Link Road) of October 2018, a follow up was carried out by the Project Consultant. The Consultant recommended RDA to instruct the main contractor to implement the agreed recommendations. However, records of the follow up was not seen in RDA's file.
1	Project Jin Fei M2 Lane (additional lane scheme) – Report was discussed with TMRSU and agreement on several safety issues raised. Some recommendations were not accepted by RDA (Case Study 4 refers).
Source: NAO Analysis	

The Ministry did not ensure that all RSAs Reports sent by the TMRSU were appropriately followed and the recommendations considered with a view to address the safety issues raised.

E.5.3 Agreement on recommendations of RSAs Reports

The RDA operates under the aegis of the Ministry of National Infrastructure and Community Development (MNICD) and its main legislation is the Road Act 1982.Under this legislation there is no legal obligation imposed on the RDA to carry out or commission any RSA for its road projects. The requirement to carry out RSAs is under the Road Traffic Act which is the main legislation used by the Ministry to address all issues relating to road safety. The Draft Standard considered the findings and recommendations of RSAs to be only advisory. Consequently, the decision whether to accept or reject them rests solely with the RDA.

Against this backdrop, the Ministry did not ensure that all new road projects were aligned with Safe System Approach whereby the 'forgiving' elements in respect of human mistakes were appropriately taken into consideration. Case Study 4 describes the impact of lack of consensus on safety recommendations in respect of Project Jin Fei M2 Lane (additional lane scheme) and also no follow up on agreed recommendations in respect of its RSA was made.

Case Study 4: Implementation of safety recommendations for project Jin Fei M2 Lane

In respect of Project Jin Fei M2 Lane (additional lane scheme), a Road Safety Report was submitted to RDA in May 2019 by the TMRSU. This project costing some Rs 330 million consisted of increasing the capacity of the Motorway and to provide a safe corridor for port traffic to Jin Fei area and vice versa. One of the safety audit recommendations related to '*Pedestrian facilities- crossings, footpath, pedestrian fence and bus lay-bys'* and is described below:

(*Recommendation 1*) :To Carry out a survey of pedestrian crossing flows south of Baie du Tombeau roundabout. Consider provision of a signal-controlled crossing that would serve people using the bus lay-bys found nearby. Figures 18 and 19 refer.

Figure 18: Photograph showing the bus stops and lay-bys across the motorway

Source: NAO

Figure 19: Photograph showing Baie du Tombeau Roundabout

Source: NAO

(*Recommendation 2*) : Install anti-climb fencing along all the median between Roche Bois roundabout and Baie du Tombeau roundabout. Figure 20 refers.

Figure 20: Photograph referring to the location where the anti-climb fencing had to be installed

Source: NAO

In August 2019, the response of RDA was as follows:

Recommendation 1- TMRSU shall make a pedestrian count and come up with the best location of the pedestrian footbridge/signalised crossing.

Recommendation 2- Guardrails have been replaced by Jersey Barriers. It is illegal for people to cross the motorway except through dedicated pathways. There exists an overhead pedestrian footbridge at Roche Bois.

As of March 2021, no traffic count was carried out to initiate the construction of a footbridge or installation of traffic signals. During a site visit in March 2021 along the newly constructed lane, pedestrians were seen crossing the motorway after climbing the Jersey Barrier, exposing themselves to risks of being killed or seriously injured. As mentioned in Case Study 1, a pedestrian hit by a vehicle moving at a speed of 80 kilometres per hour has a probability of 60 percent of being killed. Along this part of the motorway, the speed limit was 80 kilometres per hour.

Figures 21 to 23 illustrates pedestrians exposing themselves to the risks of being killed in the absence of a footbridge/signalised crossing.

Figure 21: Pedestrian climbing over the Jersey Barrier

(*Identity of the pedestrian has been concealed)*

Source: NAO

Figure 22: Pedestrian crossing motorway lanes

(*Identity of the pedestrian has been concealed)*

Source: NAO

Figure 23: Pedestrian crossing motorway at Baie du Tombeau Roundabout

Source: NAO

Also, there was no legislation which prevented a pedestrian to cross or climb over any pedestrian fence or barrier placed by any competent authority along any road or highway. The TMRSU had prepared a draft legislation in 2015 to deter pedestrians from climbing or damaging anti-climb fencing to cross motorways to address this safety issue. Under this draft legislation, a police officer could establish a contravention for this offence for which a penalty was prescribed. During period 2016-2020, there were several pedestrians killed when they climbed the barriers or damaged fencing and crossed motorways across the island.

As of March 2021, the legislation was still at draft stage. There were not enough countermeasures (legislation as deterrent and appropriate resistant barrier erected) to compel pedestrian to use footbridges, which had cost several million of rupees to build[51].

[51] *Two footbridges constructed on motorway M1 had cost some Rs 35 million in 2015.*

SECTION F

Investing in effective road safety campaigns, sensitisation and education

Key findings

- *As per good practices, communication in road safety should not be used only as an isolated safety measure but should also be combined with other measures, such as legislation, education and enforcement. None of the Communication Plans prepared was linked to an accompanying traffic law enforcement plan to reinforce and capture the results of the awareness campaigns.*
- *Also, the sensitisation activities carried out by the TMRSU and RSU remained outside the Communications Plans, without any assessment on how they could be upgraded to complement contracted-out awareness campaigns.*
- *The Ministry did not use appropriate metrics to measure the impact of the awareness campaigns independently of the surveys carried out by the service providers. Same would have identified what went right with each campaign and what aspects needed attention in subsequent campaigns in order to maximise the intended benefits.*

F.1 Introduction

Effective communication strategy is one of the ten strategic fields of actions set under the Strategy. The development of an effective communication strategy to disseminate road safety information to all categories of road users was recommended, which would aim at:

- raising awareness on road hazards, road crashes and its consequences.
- changing of human behaviour through coordinated publicity and enforcement campaigns.
- inculcating the culture of sharing the road space among road users.

The delivery of road safety education, another strategic priority of the Strategy, was being effected through the 'Continuum of Road Safety Education'. The objective was to instil a long-term behaviour change among the new generation based on the findings that had been made (non-compliance with rules, dangerous driving, and lack of knowledge and skills).

For the four financial years ended 30 June 2020, some Rs 55 million were spent on Awareness & Sensitisation Campaigns and Road Safety Education. This Section examines the conduct of awareness and sensitisation campaigns.

F.2 Conduct of Awareness campaigns and sensitisation

According to the Strategy, behavioural change in respect of road safety is not permanent and there is a need for a continuous communication through a Communication Plan. The Communication Plan should be planned for a continuous period of at least two years and sustained over time. It must be consistent, prepared on the basis of road safety objectives, and disseminated through appropriately selected media or communication networks.

The following paragraphs present findings on whether communication plans were appropriately prepared and used to execute effective sensitisation and awareness campaigns which cost some Rs 43 million (excluding the cost incurred by TMRSU and RSU personnel on sensitisation).

F.2.1 Sustainable and consistent communication plan

As the Ministry did not formulate a long-term communication strategy, annual communication plan was prepared by a Communication Cell. The Cell comprising of personnel of the Ministry, TMRSU and Police Service were assigned the tasks related to communication strategy, and elaboration and implementation of annual communication plan. In respect of financial years 2017-18 and 2018-19, the Cell planned beforehand what themes would be covered under sensitisation and awareness campaigns. Then, service providers were recruited to design and run the campaigns.

The Cell met for the last time in January 2019. A Communication Plan prepared by the Ministry for the financial year 2019-20 did not provide for what themes would be addressed in the campaigns, or through what type of media and communication networks they would be disseminated. Instead, a contract for an awareness campaign amounting to some Rs 17 million for five themes was floated and awarded and then the themes were decided. The five themes were worked out by the service provider in consultation with the Ministry. When two agreed campaigns were designed and run, it was then decided to extend same to online media and billboards. This resulted into a variation sum of some Rs 2 million of the initial contract value for the online component.

Independent to these contracted out campaigns, the Police Service and TMRSU personnel had been carrying out sensitisation campaigns well before the advent of the Strategy in the community. The RSU of the Traffic Branch had a team of personnel who were carrying out sensitisation sessions in primary and secondary schools, through radio and television programme[52]. Besides, the RSU made use of a Roll-Over Simulator in public places to reinforce the need of wearing seatbelts to minimise the risk of severe injuries during road crash. However, during interviews officers reported that they had not followed courses

[52] As from 2019, the Police Service reported that as from November 2017 no free airtime was available for sensitisation on the national television channel, for road safety programmes.

relating to sensitisation with focus on communication skills, the psychological and evaluation aspects of their delivery.

As of March 2021, no Communication Plan had been prepared for financial year 2020-21.

As per good practices, communication in road safety should not be used only as an isolated safety measure but should also be combined with other measures, such as legislation, education and enforcement[53]. None of the Communication Plans was linked to an accompanying traffic law enforcement plan to reinforce and capture the results of the awareness campaigns. Also, the sensitisation activities carried out by the TMRSU and RSU remained outside the Communications Plans, without any assessment on how they could be upgraded to complement contracted-out awareness campaigns.

The next paragraph examines the effectiveness of contracted-out campaigns.

F.2.2 Effectiveness of contracted out Awareness Campaigns

The Ministry did not use appropriate metrics to measure the impact of the awareness campaigns independently of the surveys carried out by the service providers. Same would have identified what went right with each campaign and what aspects needed attention in subsequent campaigns in order to maximise the intended benefits.

In respect of six campaigns executed during period 2017- 2019 and costing some Rs 17 million, the service provider carried surveys on a sample of targeted audience. Through interviews, the sample audience was assessed in respect of who:

i. had seen the campaign;

ii. remembered the slogan contained therein, and

iii. understood the message.

The outcomes of the surveys are as per Table 28. In three of the six campaigns, only one third of the audience understood the message. In respect of campaign 'Children Messengers of Road Safety', details on the number of interviews, those who had seen the campaign and remembered the slogan were not available.

[53] https://unece.org/road-safety-campaigns

Table 28 Results of the surveys on the campaigns				
Campaigns	**No. of interviewees**	**Seen the campaign**	**Remembered the slogan**	**Understood the message**
Vision, Visibility and Perception on the road	NA	92%	NA	75%
Children Messengers of road safety	NA	NA	NA	34%
Effects of road traffic crashes	100	NA	19%	20%
Traffic Amendment Bill	80	94%	67%	45%
Two-wheeler's campaign	100	90%	40%	33%
Dangers of using cellular phones and texting while driving	86	85%	76%	69%

NA: figures not available in the survey reports

Source: NAO Analysis of Survey Reports

Two campaigns ('RESPE' and 'Light Rail Vehicle-Level Crossing') were carried out during financial year 2019/20, costing some Rs 9 million. An assessment survey was carried by the service provider on a focus group. The size of the focus group was not indicated, and the outcome of the survey was stated as follows:

i. 95 percent of the participants recalled the campaign name and 85 percent recalled the logo, and

ii. The participants understood that the main aim of this campaign was around value development and behavioural change. They understood the purpose of the campaign name and its relevance to road safety.

During the Council meeting of October 2020, the Committee took note that despite several campaigns on road safety were carried out by the Ministry, the number of fatal road crashes and number of fatalities was not decreasing. In addition, the Council noted that too much emphasis was being laid on promotion through billboards which were not placed at strategic sites. The effectiveness of each campaign was not assessed by the Ministry.

SECTION G

Focus on results for effectiveness in road safety interventions

Key findings

- *No Results Management Framework was in place to report on important intermediate outcomes and keep focus on results. The final outcome of reducing the number of Killed and Seriously Injured by 50 percent over a 10-year period was not enough to guide interventions.*
- *Issues with coordination over interventions, absence of time frame for the implementation of several programmes and projects, and each stakeholder operating within its mandate contributed to lack of ownership and weakening of accountability for results.*

G.1 Introduction

In good practice road safety management, 'results focus' is the overarching Institutional Management Function, as described in Figure 1. It determines the country's level of ambition for road safety and takes into account the interventions and institutional arrangements which need to be put in place in order to realise it. Results focus involves:

- appraising current road safety performance through high-level strategic review.
- adopting a far-reaching road safety vision or goal for the longer term.
- analysing what could be achieved in the shorter term and proposing targets.
- agreeing targets across the road safety partnership and ensuring stakeholder accountability for results.

All other management functions influence this activity. In the absence of a clear focus on results, all other institutional functions and related interventions can lack cohesion and direction and the efficiency and effectiveness of safety programmes can be undermined. It is concerned with the measurement of the desired results and their expression as targets in terms of final outcomes, intermediate outcomes, and outputs.

A high-level strategic review was already carried out in 2013. In the Strategy, the Safe System Approach was adopted and a long-term target of reducing the number of Killed and Seriously Injured by 50 percent was set for 2025.

This Section examines to what extent focus was on what could be achieved during short to medium terms, targets were agreed among stakeholders and whether there was accountability for results.

G.1.1 Focus and agreement on short to medium term targets

The final outcome was already set in the Strategy, as reducing the number of Killed and Seriously Injured by 50 percent over a 10-year period. That was not enough to guide interventions. Intermediate outcomes contribute to the final outcome and they include measurements such as: proportion of drunk drivers in fatal and serious injury crashes, seatbelt-wearing rates, helmet-wearing rates and safety rating of road network. As mentioned in paragraph A.2, there was no results management framework in place which reported on these important intermediate outcomes and no agreed target had been set in respect of each.

Consequently, no analysis was carried out on what had been achieved in the short to medium term, to identify what went wrong and thereafter implement corrective actions.

G.1.2 Accountability for results among stakeholders

As discussed in paragraph A.2, though the Ministry was accountable for road safety at national level, several associated roles and functions necessary for management and interventions, remained outside its control or purview. Also, issues with coordination over interventions, absence of time frame for the implementation of several programme and projects and each stakeholder operating within its mandate contributed to lack of ownership and weakening of accountability for results.

CHAPTER FOUR

CONCLUSION

This Chapter concludes against the audit objective based on the analysis and findings supported by audit evidence as elaborated in the previous Chapter.

Enhancing road safety goes a long way towards making a difference in the life of citizens by reducing physical and emotional suffering, poverty and economic loss. Over the past ten years, substantial investments were made towards enhancing road safety in Mauritius. These include a capacity review on road safety management, formulation of a strategy in line with the Target 3.6 of the 2030 Agenda for Sustainable Development Goals and the Safety System Approach, allocation of resources, high level administrative and political commitments. Equally important had been the capacity building in road safety audits, raising awareness among all stakeholders to foster close partnership and common understanding of the components that drive the implementation of the Strategy

One of the milestones has been the creation of a ministry, the Ministry of Land Transport and Light Rail, for land transport with improvement of road safety within its mandate in 2019. The Action Plan of the Strategy had clearly defined what deliverables must be achieved under the respective Pillars of the Strategy by 2025. The target 50 percent reduction in the number of Killed and Seriously Injured by 2025, is a very ambitious one, yet very challenging to achieve. Over the past years, there has been sustained effort by the Ministry to implement what was prescribed in the Action Plan of the Strategy in collaboration with entities operating under its aegis, the Police Service, and other stakeholders.

However, the number of Killed and Seriously Injured per 100,000 population, the key outcome indicator in road safety, has not been on a downtrend over the past five years. This non-decreasing trend indicated that the objective of enhancing road safety by the Ministry was not being met, despite all the commitments, interventions and resources utilised.

In high performing countries, reduction in the number of Killed and Seriously Injured was due to the cumulative results of improving road safety management functions, implementing interventions known to be effective and with focus on results. The Ministry encountered challenges in discharging its management functions of planning, organising, allocating resources, leading and controlling interventions to enhance road safety.

Weaknesses in institutional management functions, identified several years ago, were still prevailing as of March 2021 and affected the Ministry's ability to manage interventions. One of the major setbacks was that there was no single entity in the driving seat to push the Strategy forward, and to appoint one was the responsibility of the Ministry.

The Ministry did not plan, organise, lead and coordinate adequately interventions which

fell within the mandate of different stakeholders. For example, no Road Traffic Enforcement Plan was prepared to align enforcement by Police Service with changes to legislation and awareness campaigns and to ensure focus was on detection and prosecution of high-risk behaviours.

In areas where the Ministry had control, it took the decisions which it deemed appropriate, but did not ascertain how they were implemented downstream and what results were achieved. For instance, the Cumulative Road Traffic Offences legislation was introduced in 2015 but no assessment had been carried out to ascertain whether the expected results were being achieved.

Road crashes represent a heavy burden for the country. The response needs to match the size of the problem, by using the limited resources available. Effective interventions are those that reduce fatal and serious injuries. In order to select effective interventions, a result management framework which tracks performance over time is important. As of March 2021, there were no intermediate and outcome indicators that would precisely track performance and progress over time and provide focus on results. Only the long-term target to be achieved by 2025 was spelt out in the Strategy. That was insufficient to ensure that responses were matching the size of the problem of non- decreasing the number of fatalities and seriously injured.

CHAPTER FIVE

RECOMMENDATIONS

This Chapter presents the recommendations based on the findings and conclusion.

5.1 General

The management functions of the Ministry are critical to enhance road safety and to achieve the target of reversing the trend in number of Killed and Seriously Injured. The response of the Ministry did not match the size of the problem caused by road crashes. To enhance road safety, the Ministry should prioritise measures that will improve its management functions, favour interventions that bring results and maintain focus of all stakeholders on results.

In priority, the Ministry should act as a Lead Agency pending the setting up of an alternate entity with the necessary mandate and resources. In parallel, it should concentrate on the assessment of the effectiveness of its legislation, ensure better allocation of funds among competing priorities, support adequate research and development, and transfer of knowledge.

In the light of above, hereunder are the specific key recommendations to enhance road safety.

5.2 Enhancing Institutional Management Functions

Institutional management functions constitute an instrumental component of road safety management system and provide direction on how cost-effective interventions are identified, prioritised, scoped, funded, targeted and delivered. The Ministry needs to assess whether the current arrangement provides the right platform for adequate management functions on interventions, accountability and focus on results. Some recommendations to enhance management functions are described in the following paragraphs.

5.2.1 Empowering the Council to act as Lead Agency

To strengthen the institutional management functions, the Ministry can consider making amendments to relevant legislation to provide the following:

- empower the Council to act as the lead entity, accountable for the implementation of the Strategy and to serve as a focal point for all matters relating to road safety.

- include in the mandate of the Council, the responsibility to formulate a performance result framework and to provide regular reports to the National Road Safety Commission on results. Also, to report on matters calling for better coordination among the various Government bodies and motoring organisations dealing with road safety matters.

- confer authority on the Council to request all stakeholders to report on their interventions to ensure alignment with decisions already taken in consultation with them.

5.2.2 Enhancing management functions of the Ministry

The Ministry should concentrate on the assessment of the effectiveness of its legislation, ensure a better allocation of funds among competing priorities, support adequate research and development, and transfer of knowledge. The issues that need immediate attention are:

- the implementation of the Cumulative Road Traffic Offences legislation should be examined to close all loopholes in the regulations which are exploited to pursue unsafe behaviour and avoid disqualification.

- interventions falling under Programmes should be prioritised by revisiting the Action Plan to ensure that they are aligned with the Strategy. Interventions should also be appropriately planned and timely implemented to avoid non-utilisation of allocated fund.

- Collection of data for research and sharing among stakeholders needs to be given the proper attention as they are critical to support evidence-based interventions.

5.3 Management of Interventions

The Ministry plays a pivotal role in managing the five areas of interventions which produce road safety results. The recommendations in each area of interventions are as follows:

5.3.1 Need for proper licensing and admission of safe users

The re-engineering of the training and licensing system initiated in 2017 which has stalled, can be activated in the following ways:

- The training cost charged by 'moto écoles' was considered to be on the high side and accounted for low intakes. As an alternative to subsidising the training costs individually, free massive online training can be organised by the Ministry. This training can include the theoretical components covered by the 'moto écoles' and can complement the riding skills already acquired by the trainees. This can potentially build their capacity to pass the tests in a more efficient and economical way.

  One model that can be considered is the '*Ridefree- a free online training* 'course on moped and motorcycles riders provided by the Driver and Vehicle Standard Agency in United Kingdom. The course contains five online learning modules including topics like the Highway Code and hazard perception, clothing, maintenance and

rider's behaviours.

- As regards the backlog and resource constraints for carrying out tests by the Police Service, there is a need to assess the number of tests the Police Service can potentially carry out by March 2026. This will provide better visibility on the backlog that might not be cleared and allow the Ministry sufficient time to work out alternatives to clear same.

  The feasibility of a separation of the management of driving licences from the core functions of the Police Service could be explored. The Ministry can devise a scheme by outsourcing the tests for auto and motor cycles under the supervision of the Police Service.

- As regards the training of Driving Instructors and Police Examiners, a Steering Committee needs to be set up to plan the whole project to ensure that all issues are considered beforehand, to prevent those which impeded the 'moto école' project.

5.3.2 Ensuring Traffic laws are implemented effectively to sustain safe behaviour

The Ministry should ensure that an appropriate enforcement plan is prepared, taking into consideration available police resources, traffic offences that need to be targeted in priority and how the outcomes would be measured and monitored.

Pending the setting up of a Traffic Offence Court, the following can be considered to improve the efficiency and effectiveness of the prosecution process:

- Giving priority to the processing and lodging of case files for of traffic offences that are more likely to cause fatalities and severe injuries during road crashes.

- In respect of struck out cases, the addresses of offenders to be precisely ascertained through additional means like collaboration from utility companies, social security services and the Electoral Commissioner's Office.

- The reasons for which cases have been set aside under the Cumulative Road Traffic Offences legislation, need to be examined and appropriate amendments considered to close all possible loopholes.

5.3.3 Reinforcing Fitness control system and enforcement to allow only safe vehicles on the road

The NLTA needs to harmonise documentation and criteria for assessment of 'major 'and 'minor' defects across all Vehicle Examination Centres to ensure consistency in the new fitness control system. In parallel, it needs to provide the assurance that its roadside safety

checks are targeting the appropriate number of vehicles by submitting regular information on its output and outcomes. Additionally, the following outstanding issues need to be resolved:

- The policy aspects relating to fitness control of autocycles and Government vehicles need to be discussed and concluded.

- Speed management of heavy vehicles through speed limiters and the registration plates of auto/ motor cycles need immediate attention. These two issues were not addressed effectively. The hiring of external expertise should be considered.

- Regulations to prohibit the entry of structurally damaged vehicles on public roads, should be finalised and enforced.

- The NLTA should carry out an audit of cases where vehicles issued with fitness certificates within the VEC's premises were immediately found not roadworthy by officers of the NTLA outside the premises. The overhauling of certain aspects of the fitness control are required together with upgrading of the competencies of the testers.

5.3.4 Providing safer roads and roadsides

The Ministry should place more emphasis on collection and analysis of road crash data, reconsider prioritisation of funds and enforce more effectively the existing legal provision to provide safer roads and roadsides. The proposed courses of actions are as follows:

- A closer follow up is required by the Ministry to engage the Police Service to support a road crash data collection system on which some Rs 13.5 million had been invested, and still not functional. Operation of this system is important to select and implement evidence-based interventions.

- Funds were allocated and unspent on projects while starving other projects related to improving roads and roadsides. Consequently, budget monitoring and project implementation of 'Safer Roads and Roadsides' projects need to be improved to ensure that funds allocated are fully utilised.

- Additionally, surveys should be carried out across the entire island, to identify where and what amount of remedial works need to be carried out by the TMRSU. Also, it will help to prioritise allocation of funds and planning for such works at a national level.

- Support should be provided to local authorities to build knowledge and skills on the Safe System Approach, sharing of specifications of signage and road markings.

- The Ministry should use appropriate legal authority to ensure that safety aspects are duly considered during design stages and construction and upgrading of road projects. This can be achieved by promoting the need for a local standard in road design and maintenance.

- The 'Draft Standard for Road Safety Audit' needs to be finalised, approved and provided with necessary authority to ensure compliance with same.

- Also, there should be adequate follow up on the road safety audit reports to ensure that the recommendations are discussed, agreed and implemented in a timely manner.

5.3.5 Investing in effective road safety campaigns, sensitisation and education

The Ministry should formulate a long-term Communication Strategy, accompanied by medium to long term Communication Plans, in order to sustain appropriate behavioural change towards road safety. It needs to build capacity among those personnel who are carrying out sensitisation in the community to ensure the effectiveness of their delivery. Awareness Campaigns were costly. Future campaigns should be accompanied by planned enforcement and evaluated to ensure that the intended benefits are realised.

5.4 Focusing on results for effectiveness in road safety interventions

In order to guide efficiently and effectively road safety management and interventions, intermediate outcomes need to be defined by the Ministry and agreed by all stakeholders. This will help in analysing what has been achieved in the short to medium term, identifying what went wrong and initiating corrective actions.

Also, to ensure accountability and focus on results, time frames should be set as far as possible, for programmes and projects implemented by stakeholders.

Ministry's Reply

- The Road Traffic Act needs to be amended to create a Lead Agency which should have a Technical arm and a Secretariat for implementation and coordination of Road safety Interventions. The Lead Agency should be conferred the authority to request all stakeholders to report on their interventions to ensure alignment with decisions already taken in consultation with them. The Lead Agency should formulate a performance result framework and regularly report to the National Road Safety Commission on the results and matters calling for better coordination among the various Government bodies and motoring organisations dealing with road safety matters.

- The Ministry agreed that intermediate outcomes need to be defined and agreed by all stakeholders.

- Actions have been initiated under the Road Safety Observatory to train technical staff of the TMRSU on the Safe System Approach. Discussions are also being held with the UOM to provide similar training to other stakeholders including RDA.

- Loopholes in the implementation of the Cumulative Road Traffic Offences legislation are to be studied together with the Police and State Law Office for any appropriate measures/amendments to address identified issues.

- The Ministry will request the Police Prosecution Office to submit the information on cases set aside under the Cumulative Road Traffic Offences in the first instance.

- Regulations have been made to address the backlog issue enabling the Police to assess the number of tests.

- The views of the Police will be sought with regard to the separation of the management of driving licences from the core functions of the Police Service. Subject to no objection from the Police, the Ministry can take on board the recommendation of the NAO.

- The Ministry is working in close collaboration with the Mauritius Institute of Training and Development to set up a Driver Education and Training Centre and intends to recruit a strategic partner to advise on the whole process of reviewing the Driver Standard.

- The Lead Agency would have the authority to ensure that an evidenced based Plan is devised in collaboration with the Police and NLTA and implemented.

- The Ministry will request information on the outcome of the Court cases from the Police and bring up possible solutions.

- The criteria for assessment for major defects and minor defects will be redefined.

- A meeting will be convened with representatives of VECs on a regular basis to address the issue of cases where vehicles issued with fitness certificates within the VEC's premises were immediately found not roadworthy by officers of the NTLA outside the premises.

- Vehicle Examination Centres will be requested to install an apparatus to check speed limiters. The Ministry would also look into the possibility of implementing a Global Positioning System on heavy vehicles and buses which would connect to a

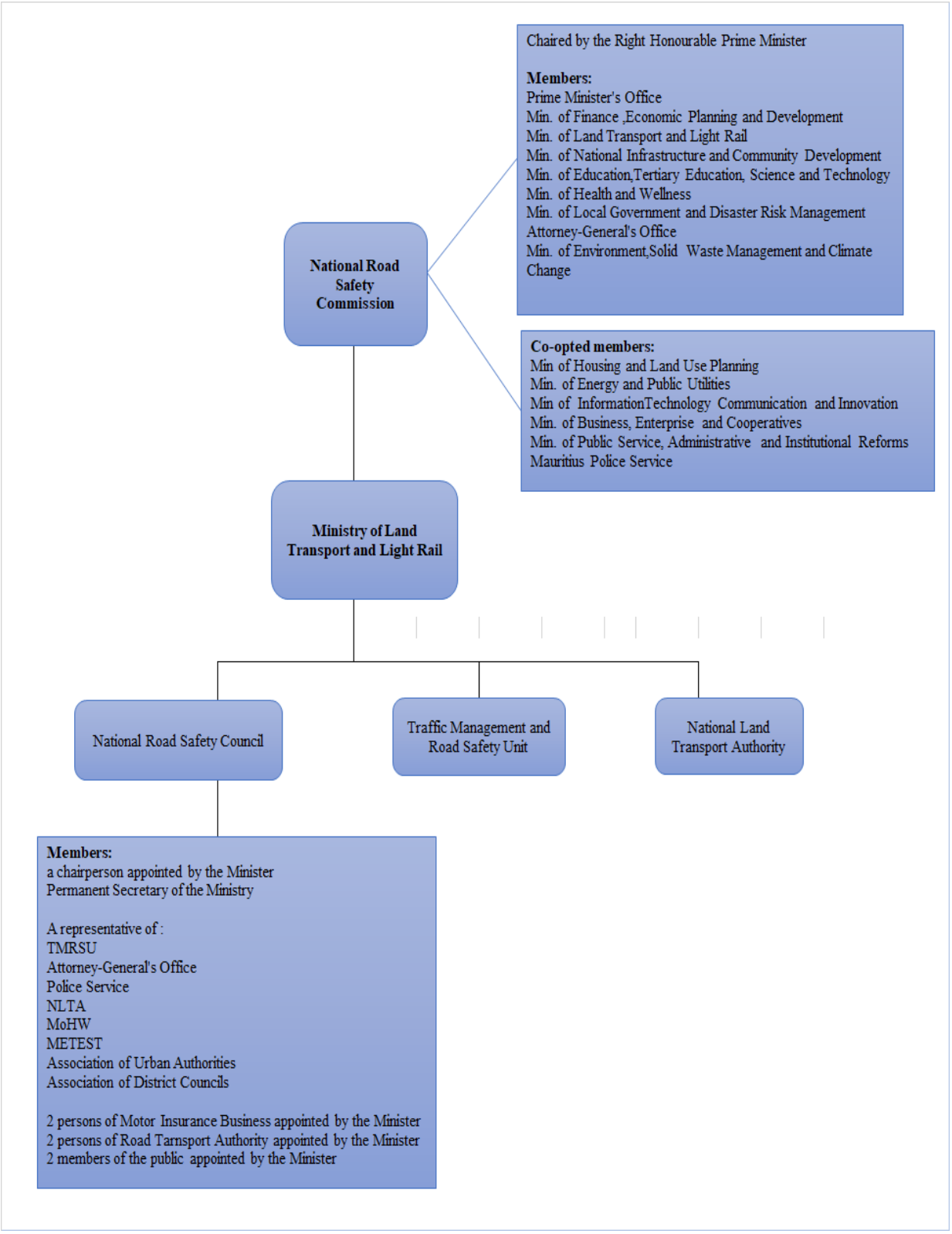
system at the NLTA for tracking vehicles speeding vehicle beyond 70 kilometres per hour limit.

- The five stages of Road Safety Audit being practiced internationally were reviewed by the Traffic Management and Road Safety Unit and brought down to only three stages for convenience and thus avoiding delays in the implementation of Road Projects. The views of RDA were still being awaited for the adoption of the standard process to be followed for road safety audits.

- The Ministry will find alternative ways to perform small campaigns at lower cost such as through social media, Radio and Television.

Appendix I

INSTITUTIONAL SET UP OF THE ROAD SAFETY MANAGEMEN SYSTEM



Source: NAO Analysis

Appendix II

Audit Questions and Sub-Questions

Audit Question 1: **Were the Institutional Management Functions provided by the Ministry effective to sustain a national road safety management system?**

Sub-Question 1: *Was a Lead Agency established with clearly defined roles responsible of the implementation of the national road safety strategy?*

Sub-Question 2: *Were the Institutional Management Functions result-focussed?*

Sub-Question 3: *Was effective coordination ensured among the different stakeholders?*

Sub-Question 4: *Were there adequate legislations in place to meet road safety tasks set out and agreed within the national strategy?*

Sub-Question 5: *Were adequate and sustainable road safety funding mechanisms established?*

Sub-Question 6: *Were there appropriate monitoring and evaluation of interventions?*

Sub-Question 7: *Was there adequate research and development and knowledge transfer to guide the implementation of the strategy?*

Audit Question 2: **Was Ministry's interventions effective in:**

Sub-Question 1: *Promoting a system that licensed and admitted safe road users only?*

Sub-Question 2: *Enforcing road traffic legislations to maintain safe driving ?*

Sub-Question 3: *Investing in road safety campaigns, sensitisation and education that promoted safe behaviour of road users?*

Sub-Question 4: *Ensuring that only safe vehicles were admitted on public roads?*

Sub-Question 5: *Promoting a mechanism that was conducive to provide safer roads and roadsides?*

Continued

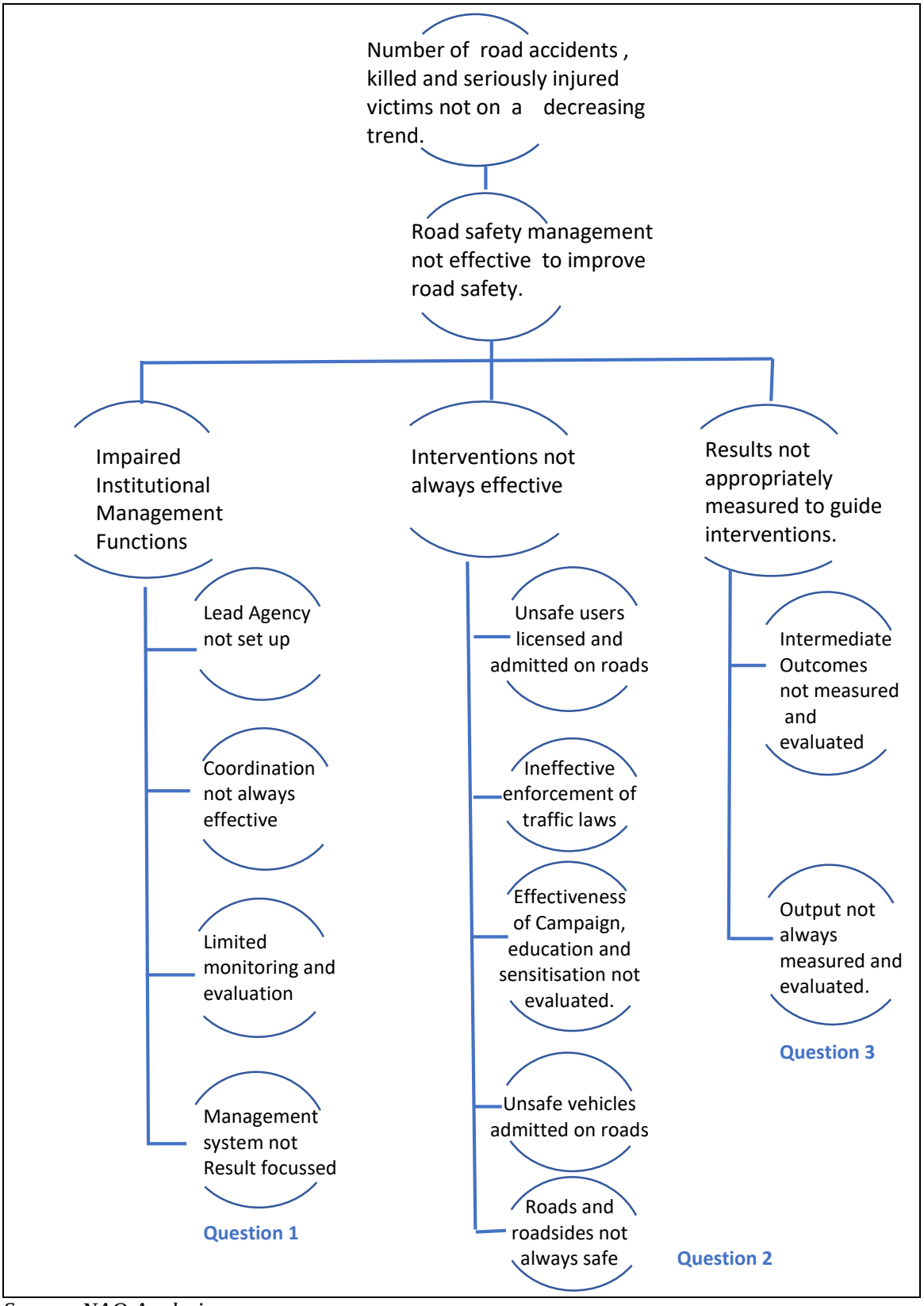
Audit Question 3: **Was the Ministry focussed on results in order to provide direction and effectiveness in all road safety interventions?**

Sub-Question 1: *Was there focus and agreement on short to medium term targets?*

Sub-Question 2: *Was there accountability for results among stakeholders ?*

Diagram -Problem Tree Analysis

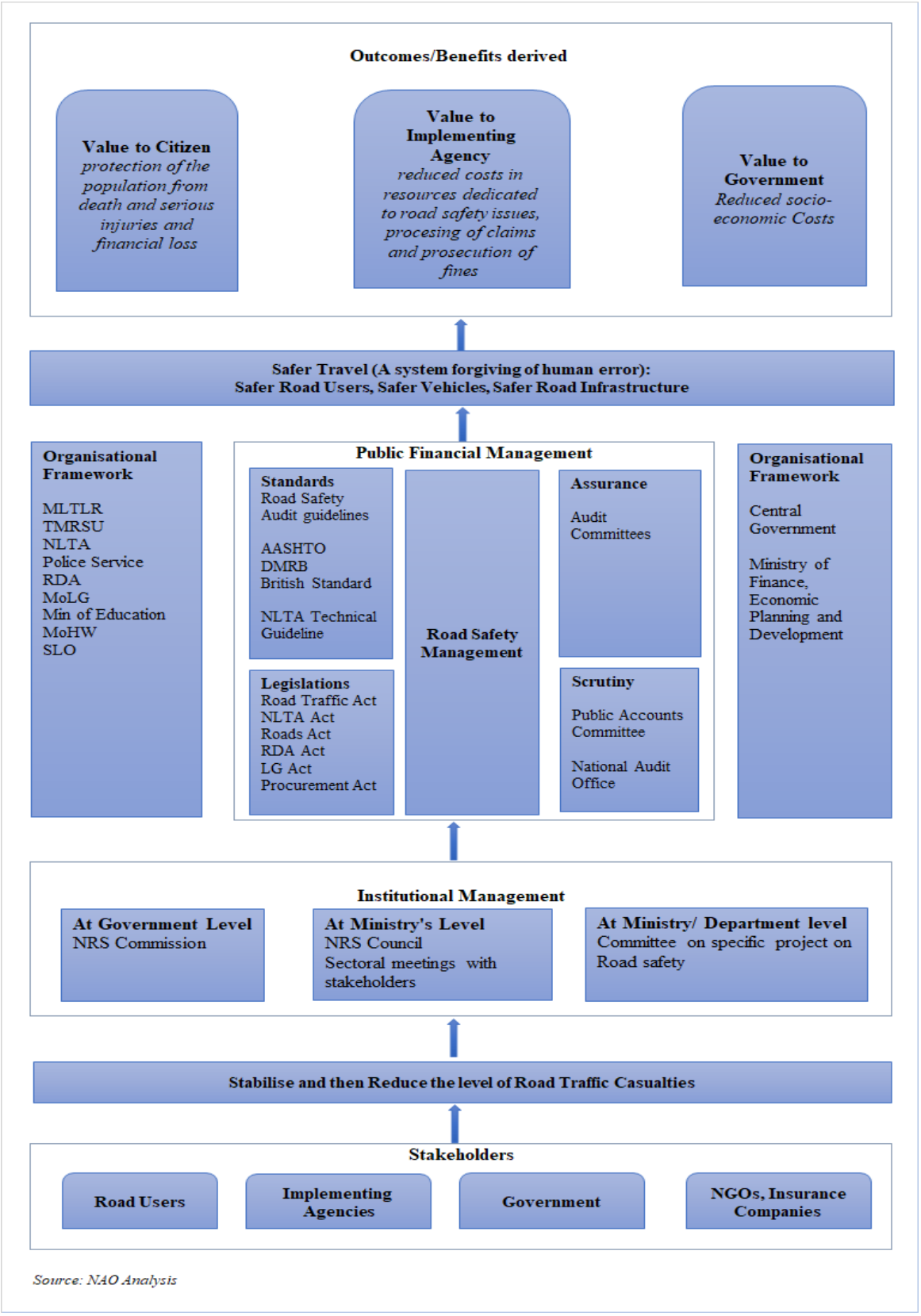
ENHANCING ROAD SAFETY



Source: NAO Analysis

APPENDIX III

Whole of Government Approach to Road Safety



Source: NAO Analysis

APPENDIX IV

STAKEHOLDER ANALYSIS

	Stakeholder	Role of the Stakeholder	Interest of the stakeholder	Level of involvement
Internal Stakeholders	National Road Safety Commission	Defines national objectives and goals and determine policies and priorities regarding road safety projects and programmes	Provides effective leadership in road safety management and coordination of road safety activities	High
	National Road Safety Council	Coordinates and advises on the implementation of the road safety interventions	Mechanism for effective road safety strategy implementation	High
	Ministry of Land Transport and Light Rail	Responsible for road safety policy, legislation and resource allocation	Improve Road Safety	High
	Traffic Management Road Safety Unit	Main implementing body of the National Road Safety Strategy 2016-2025	Ensures that the road system efficiently meets the economic needs of the country and is safe for all road users	High
	National Land Transport Authority	Responsible for Fitness Control System Enforcement of road transport legislation	Provision of safer vehicles on public roads.	High
External Stakeholders	Ministry of Finance, Economic Planning and Development	Funding Agency	Provides funds from the Government budget to implement the National Road safety strategy which will be implemented over a span of ten years and in three phases	High
	Mauritius Police Service	Enforcement of traffic laws, licensing, and sensitisation,	Establishing and enforcing laws to address key behavioural risk factors for road traffic injuries. Maintaining effective licensing system Raising of awareness on road safety.	High
	Road Development Authority	Provides safe roads and infrastructure with regards to motorways and main roads	Maintaining the classified road network in a safe and rideable quality	High
	Ministry of Local Government and Disaster Risk Management	Provides safer road infrastructures with regards to urban and rural roads	Sustain capacity to provide and maintain road traffic calming devices, street lighting, road marking and footpaths.	Medium/ High
	Ministry of Education, Tertiary Education, Science and Technology	Identifies the different mechanism to deliver road safety Education and to establish the most appropriate delivery mechanism	Introduction of continuum of road safety education program for primary and secondary schools Raising of awareness campaign	Medium
	State Law Office	Assist in formulation of regulations and legislations to ensure safe behaviour	Strengthening the Road Traffic Law and Enforcement	Medium
	Ministry of Health and Wellness	Prompt pre-hospital trauma care system to decrease preventable morbidity and mortality	Ensuring a continuum of post-crash care	Medium/ High

Source: NAO Analysis of National Road Safety Strategy 2016-25

Appendix V

Checklist for Lead agency role and Institutional Management Functions

Questions	Yes	Par-tial	Pen-ding	No
Does the lead agency (or de facto lead agency/ agencies) effectively contribute to the *result focus* management function ?				
o Appraising current road safety performance through high- level strategic review?			X	
o Adopting a far-reaching road safety vision for the longer term?			X	
o Analyzing what could be achieved in the medium term			X	
o Setting quantitative targets by mutual consent across the road safety partnership?			X	
o Establishing mechanisms to ensure partnership?			X	
Does the lead agency (or de facto lead agency/agencies) effectively contribute to the *coordination* management function?				
o Horizontal coordination across central Government ?		X		
o Vertical coordination from central to regional and local levels of Government ?		X		
o Specific delivery partnerships between Government, non- Government, community and business at the central, regional and local levels ?		X		
o Parliamentary relations at central, regional and local levels ?				X
Does the lead agency (or de facto lead agency/agencies) effectively contribute to the *legislation* management function ?				
o Reviewing the scope of the legislative framework ?		X		
o Developing legislation needed for the road safety strategy ?		X		
o Consolidating legislation ?		X		
o Securing legislative resources for road safety ?			X	
Does the lead agency (or de facto lead agency/agencies) effec tively contribute to the *funding and resource* allocation management function?				
o Ensuring sustainable funding sources?		X		
o Establishing procedures to guide the allocation of resources across safety programs?		X		
Does the lead agency (or de facto lead agency/agencies) effectively contribute to the *promotion* management function?				
o Promotion of a far-reaching road safety vision or goal ?		X		
o Championing and promotion at high level ?		X		
o Multisectoral promotion of effective interventions and shared responsibility ?		X		
o Leading by example with in-house road safety policies ?		X		
o Developing and supporting safety rating programs and the publication of their results?		X		
o Carrying out national advertising ?		X		
o Encouraging promotion at local level ?		X		
Does the lead agency effectively contribute to the monitoring & evaluation management function?				
o Establishing and supporting data systems to set and monitor final and intermediate outcome and output targets ?				X
o Transparent review of the national road safety strategy and its performance ?				X
o Making any necessary adjustments to achieve desired results ?				X
Does the lead agency (or de facto lead agency/agencies) effectively contribute to the *research & development and knowledge transfer* management function?				
o Developing capacity for multi-disciplinary research and knowledge transfer ?				X
o Creating a national road safety research strategy and annual ?				X
o Securing sources of sustainable funding for road safety ?				X
o Training and professional exchange ?				X
o Establishing good practice guidelines ?				X
o Setting up demonstration projects				X
Source: Review of Road Safety Management Capacity in Mauritius - April 2013				

Appendix VI

Status on Action Plan of the National Road Safety Strategy 2016-2025 as of March 2021

The Action Plan has been set into three phases, with strategic actions grouped under respective Pillars. The three phases are: Establishment (2016-18), Growth (2019-21) and Consolidation Phase (2022-25).

Strategic Actions Establishment Phase (2016-18)	Status as at March 2021
Pillar 1 : Road Safety Management	
Setting up of a National Road Safety Observatory	Initiated. Memorandum of Understanding with UOM. Research is still ongoing.
Setting up of a Road Crash Research Laboratory	Not yet initiated.
Constitute 4 road crash investigation teams	Project started with the training of investigators from all sectors including NGOs. Later discontinued in 2018.
Road Safety Academy	Not initiated
Pillar 2 : Safer Road Infrastructure for all road users	
Hazardous road location program	Procurement of Road Crash data Management System and 80 rugged tablets completed. However, tablets were not optimally used. Incomplete road crash database.
Roadside hazard management and hazards elimination	No standardization of road signage across the island. Maintenance of road markings is not being carried out by local authorities.
Five stage road safety audit	TMRSU carries out road safety audit for new road infrastructure at pre-opening stage only.
Road safety assessment program for unclassified roads	Not carried out by local authorities. TMRSU carried out an assessment of 162.6 kms the Pamplemousses District and the Beau Vallon region.
Training on Road Safety Audit	Completed in collaboration with SWEROAD and CARRS-Q.
Review the functions and classification of existing roads	Not yet initiated. Data from the Origin Destination Survey would be required for the speed limit review exercise. Tender was launched for OD survey and was under evaluation .
Enhance safety of vulnerable road users	Ongoing
Training of personnel on road safety Engineering and Safe System Approach	Training carried out by Sweroad in 2017.
Inventory of Road Safety Assets	No
Set up a dedicated unit for Traffic Signage upgrading	No
Maintenance program in different phases	No. There is no preventive maintenance plan. Corrective maintenance is conducted based on complaints received.

Continued

Appendix VI- *Continued*

Status on Action Plan of the National Road Safety Strategy 2016-2025 as of March 2021

Strategic Actions Establishment Phase (2016-18)	Status as at March 2021
Pillar 3 : Safer vehicles	
Reorganising the Road worthiness control of vehicle	
Develop appropriate regulatory framework	Technical Guidelines initiated in 2014, still in draft stage
Operation of fitness centres on a regional basis Improvement of NLTA database systems	Completed To confirm. Database of VECs computerised.
Training of vehicle examiners	In abeyance due to no funding.
Pillar 4 : Safe Road Users	
Setting up an effective Communication Strategy	
Develop and implement Communication Plan	Communication Plan prepared in an annual basis.
Road Safety Portal	No
Raising awareness on road safety hazards, road crashes and its consequences	Ongoing.
Coordinated publicity and enforcement campaigns	Ongoing. Sectoral Committee Meeting with Ministry-TMRSU-and Police
Strengthening Road Traffic Law and Enforcement	
Stricter penalties	Done
Road Traffic Enforcement Control Plan	Not implemented
Police Force-Trained brigade specialised in road traffic offences	Launched in 2015 with 40 riders but later operating with reduced capacity.
Control speeding and drink driving	Enforcement Ongoing
Road Safety Education	
Continuum of RSE from pre-primary to tertiary levels	Initiated in Primary Schools only.
Develop road safety curriculum for RSE in primary schools	In Progress.
Training of road safety practitioners to deliver RSE	Theoretical training provided. Practical training yet to be conducted.
Developing teaching materials RSE	In Progress.
Reengineering the Driving licensing system	
National standard training course for all category of drivers	Initiated
Review licensing scheme for drivers including motorcyclists and auto cyclists	Initiated.
Develop a Qualification process for driving instructors	Initiated
Setting standards for driving schools for all type of vehicles	Initiated

Appendix VII

Traffic Offences Established under Road Traffic Act during period 2015-2019

	Traffic offences established under Road Traffic Act	YEARS				
		2015	2016	2017	2018	2019
1	***Negligence***					
	Dangerous driving	137	160	125	241	146
	Driving without due care and attention	1,400	1,353	1,529	1,577	1,382
	Making use of cellular phone whilst driving	4,158	6,137	11,592	8,587	4,605
	Driver failing to render reasonable assistance to any person injured in the accident	6	2	10	2	4
2	***Dangerous acts***					
	Driving motor vehicle with alcohol concentration above prescribed limit	1,876	1,918	1,889	1,921	1,721
	Cycling under the influence of intoxicating drink/drugs	14	8	22	11	12
	In charge of a motor vehicle under influence of intoxicating drink/drugs	37	86	62	65	24
3	***Non-injurious traffic violations***					
	Failing to wear seat belt whilst driving	6,582	8,416	10,749	9,687	4,323
	Protective helmet improperly secured	1,632	1,416	1,936	1,578	800
	Rider/Pillion rider failing to wear protective helmet	487	501	848	839	482
	Failing to provide specimen for Breath Test	560	435	337	398	223
	Speeding					
	Exceeding speed limit - Hand held devices	39,285	40,969	30,676	41,669	33,617
	Exceeding speed limit - Fixed cameras	19,078	45,366	62,662	45,526	47,935
	Using vehicle without motor vehicle licence	224	917	253	274	230
	Motor vehicle licence not affixed	8,700	8,636	10,424	12,229	7,057
	Failing to produce driving licence on demand	22,780	22,404	22,428	25,735	14,169
	Worn out tyre	2,979	2,778	2,589	2,920	1,029
	Allowing oil to drop	389	339	278	170	79
	Failing to comply with traffic sign	2,765	3,427	2,761	4,199	2,535
	Breach of conditions attached to provisional licence	10,855	8,481	6,969	7,178	3,467
	Overtaking on uninterrupted white line	1,132	1,668	1,365	1,799	919
	Parking on prohibited area	1,703	1,158	1,569	1,841	1,231
	Parking on double yellow line	1,418	1,797	2,631	3,029	1,748
	Driving without licence	1,076	994	929	976	842
	Driving under disqualification	77	65	65	68	33
	Inoperative insurance policy	204	116	139	394	316
	Breach of condition attached to carriers licence	793	715	800	765	590
	Load not properly secured	216	279	249	240	120
	No tail light	700	661	572	690	158
	Driving a vehicle in a dangerous condition	103	115	79	136	21
	Using motor vehicle for another purpose	918	516	399	473	265
	Expired certificate of fitness	128	144	153	212	314
	Failing to effect transfer	312	259	202	207	157
	Parking on footpath/pavement	842	977	1,221	1,818	821
	Wearing Full Face protective helmet when not riding motorcycle/autocycle	33	4	34	34	19
	Failing to give name and address	446	452	466	431	373
	Failing to report accident within delay	218	184	238	237	175
	Fittings out of order	1,808	1,406	1,472	2,485	1,230
	Admitting/carrying more passengers	116	84	50	48	55
	Failing to produce driving licence/Certificate of insurance within delay	1,570	1,088	791	664	656
	Failing to stop when signaled by a police officer in uniform	1,677	1,487	1,718	1,804	1,250
	Failing to pick up passengers at bus stop	100	70	66	66	66
	Inefficient silencer	2,366	2,015	1,778	2,495	1,292
	Leaving engine 'On' while vehicle is stationary	15	22	81	28	156
	Bicycle contravention	125	181	115	41	58
	Other traffic offences	60,130	57,983	50,673	53,707	36,884
	TOTAL	**202,170**	**228,189**	**235,994**	**239,494**	**173,589**

Source: Statistics Mauritius

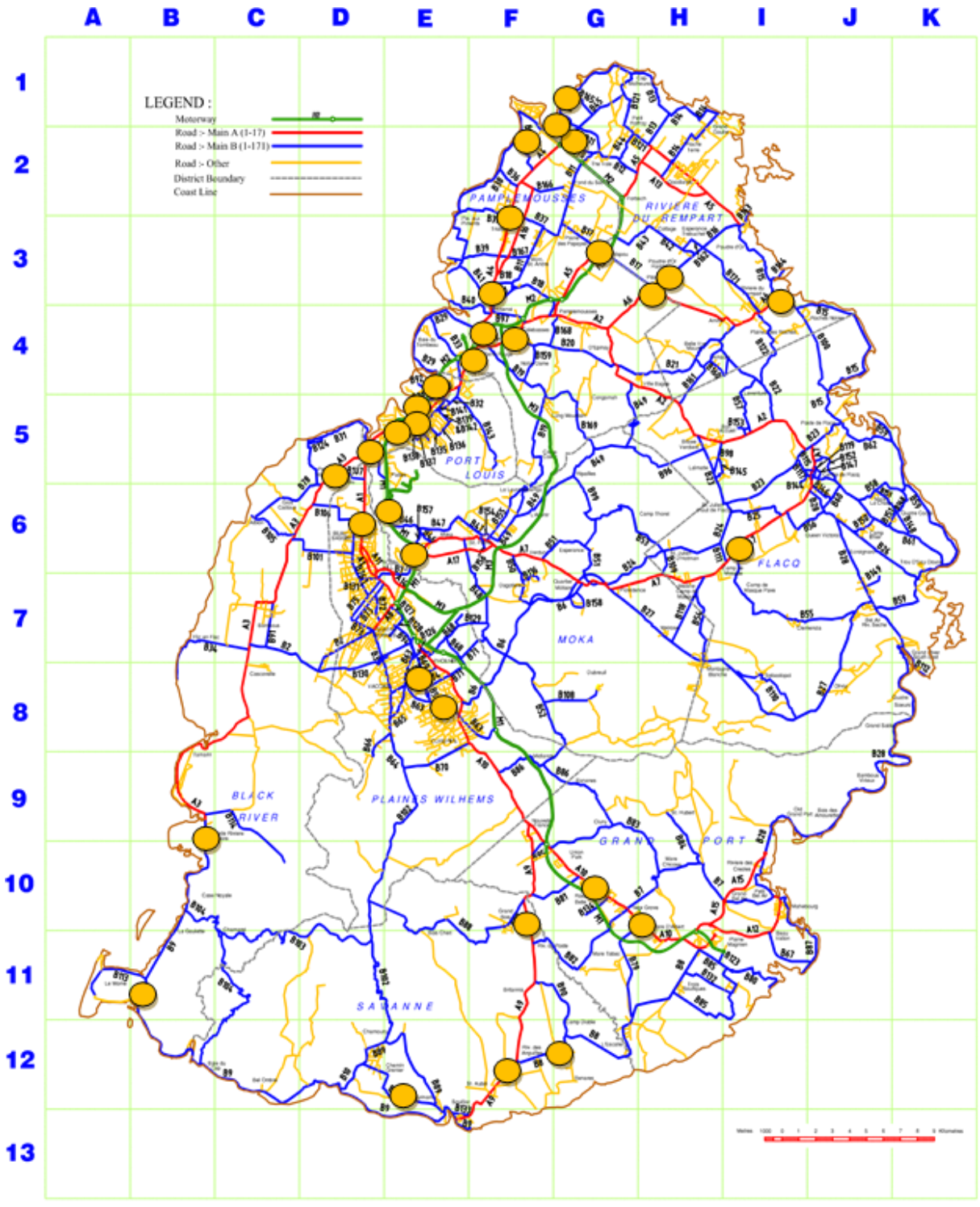
Appendix VIII

Convicted Road Traffic Offences during 2014-2019 as per Statistics Mauritius

Offences	2014	2015	2016	2017	2018	2019
Negligence						
Traffic offences under Road Traffic Act						
Driving without due care and attention & dangerous driving	1,068	1,252	1,271	1,105	1,041	943
Making use of cellular phone whilst driving	2,930	2,840	2,269	2,989	3,226	1,721
Dangerous acts						
Traffic offences under Road Traffic Act						-
Driving motor vehicle with alcohol concentration above prescribed limit [2]	819	1,175	948	1,099	1,014	917
Non-injurious traffic violations						
Traffic offences under Road Traffic Act [3]						-
Failing to wear seat belt whilst driving	3,784	3,725	3,332	3,567	3,712	2,252
Failing to wear or securely fasten crash helmet	1,683	1,803	1,532	1,342	1,257	1,047
Failing to submit to a breath/urine/blood test	131	307	283	263	204	128
Exceeding speed limit	3,169	2,322	4,827	3,914	4,310	5,910
Unlicenced motor vehicle (MV)	986	684	683	605	474	327
Not affixed: motor vehicle licence/insurance vignette/certificate of fitness & insurance, etc.	3,081	5,944	4,741	3,905	4,102	3,941
Failing to produce on demand/within delay: driving licence or its photocopy/agreed statement of facts/certificate of fitness/insurance/registration,etc.	12,890	13,855	13,205	10,191	10,285	6,790
VEHICLE related traffic offences (inefficient silencer, worn out tyre, allowing oil to drop, no mirror, no horn, no brake, no lamps/lights, etc.)	10,703	14,057	14,231	12,283	11,389	8,724
Failing to comply with traffic sign	3,847	3,769	2,951	2,570	2,522	2,079
Driving in wrong direction/on wrong side/on prohibited road/in No Entry, failing to keep right/left, etc.	105	769	635	898	892	377
Driving without licence	2,234	2,507	2,023	2,074	1,700	1,360
Driving under disqualification	102	159	138	85	59	88
Uninsured MV/inoperative insurance policy	815	1,198	1,073	871	742	591
Breach of condition attached to provisional licence/carriers licence/No letter 'L'	7,608	8,521	8,861	5,206	4,190	3,364
Expired certificate of fitness/insurance	NA	513	334	128	159	61
Failing to wear high visibility clothing	NA	686	1,273	1,784	1,692	1,216
Failing to comply with police signal	451	514	430	732	518	376
OVERTAKING related traffic offences	865	798	566	791	369	292
PARKING related traffic offences	4,166	3,590	2,610	2,088	1,723	1,596
Taking motor vehicle without owner's consent	1,511	1,565	1,525	1,615	1,425	1,047
Traffic offences [4] OTHER (including bicycle contraventions)	20,694	12,704	10,688	5,184	4,815	4,077
Total	**83,642**	**85,257**	**80,429**	**65,289**	**61,820**	**49,224**

APPENDIX IX

ROAD CRASHES CLUSTERS IN MAURITIUS - ***the hazardous locations mapped on to the road network in Mauritius.***



Source: National Road Safety Strategy 2016-2025

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