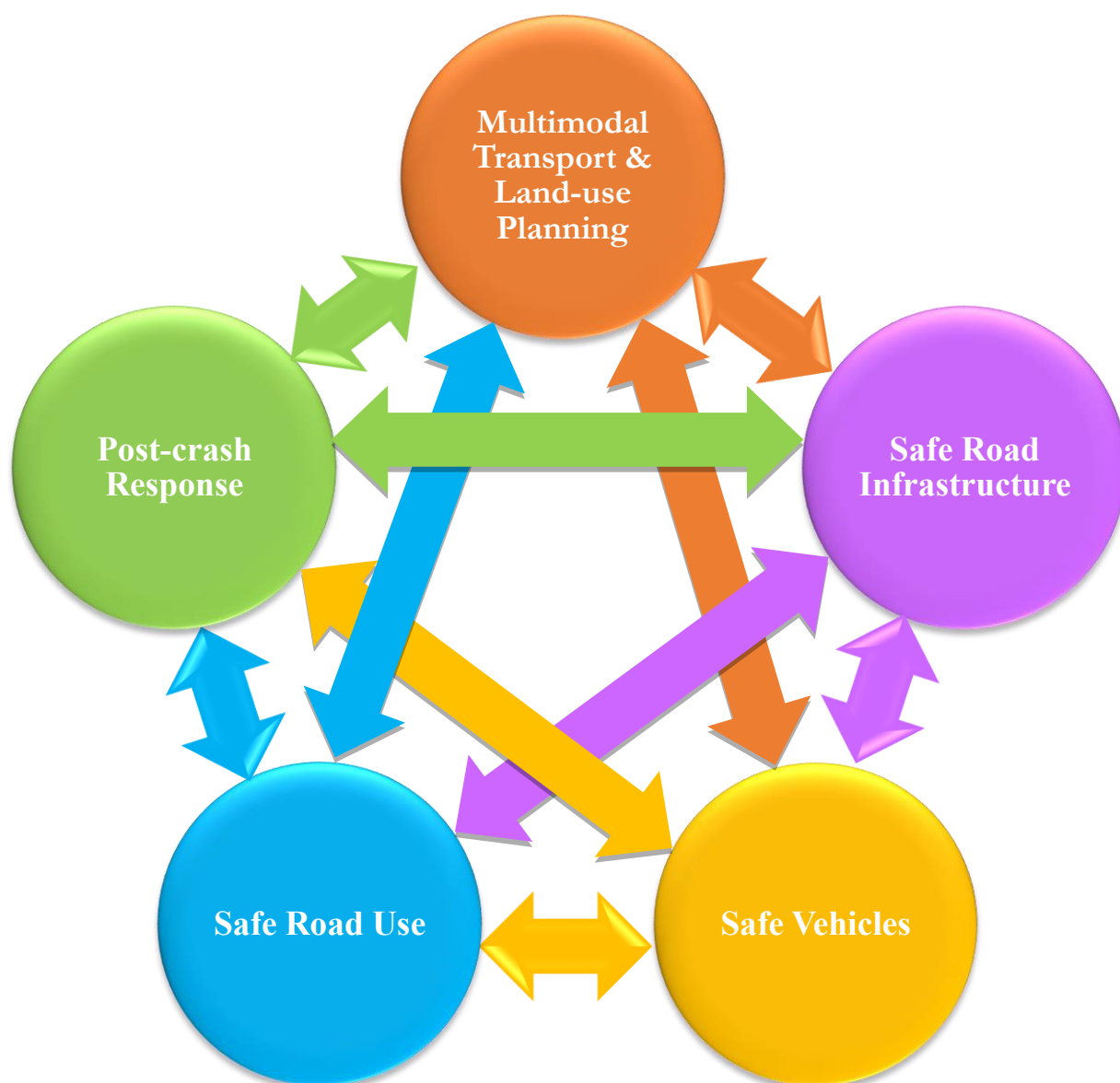




GOVERNMENT OF NEPAL

MINISTRY OF PHYSICAL INFRASTRUCTURE AND TRANSPORT

Nepal Road Safety Action Plan(2021–2030) Draft



October 2021

EXECUTIVE SUMMARY

THE BACKGROUND

The government policy for the transportation sector is to develop a sustainable, reliable, cost-effective, and safe transport system that contributes to environmental, social, and economic goals. In the last ten years, road crashes have claimed on an average 2020 lives every year and has posed as a serious public health issue in the country. It points to a need to improve road safety standards and make reducing road fatalities and injuries a national priority. This requires an assessment of the provisions made so far and devise the course of action for the next decade.

In the past, mainly DOR, and to some extent DOLI, were considered as the nodal road agencies responsible for building roads in Nepal. With the adoption of a federal structure, all the 753 local government units are empowered to construct and maintain roads. This devolution of power and responsibility has seen the country make significant progress towards achieving the SDG Goal 9.1 of availing rural access to roads. However, the increase in the road network without due attention to engineering, enforcement, and education has led to a rising trend in road traffic casualties over the years.

Several global commitments have been made to address and improve the state of road safety in the country. In 2007, Nepal committed to halving road fatalities in a decade at the Ministerial Conference on Transport, held in Busan¹. In line with the First UN Decade of Action for Road Safety, Nepal drafted a Road Safety Action Plan 2013-20 to consolidate efforts of government agencies in reducing road casualties and fatalities. The country further renewed its commitment by adopting SDG Target 3.6 on road safety. However, due to resource constraints, the recommendations and planned activities could not be effectively implemented. With the renewed goals set out in the Stockholm Declaration in 2020, an opportunity has unfolded to update the action plan and renew focus on our actions.

It has now become clear that commitments should be supported by actions that represent local aspirations and capacities. The current version of the National RSAP developed for the period from the year 2021 to 2030 aims to achieve renewed national and international commitments.

POLICY FRAMEWORK

The policy documents of different government agencies cover few elements of road safety. Amid resource constraint, however, the need to focus on core issues has diverted ministries and departments' attention from road safety, which remains a fringe issue across disciplines such as transport, health, law.

Nonetheless, the 15th periodic plan offers considerable leverage to improve road safety through the inclusion of VOC reduction and road safety enhancement in the objectives for the Roads Sector and inclusion of safe passenger and freight transport in that for the Transport Management Sector.

In a departure from the 14th Plan, the 15th Plan has emphasized on the creation of a conducive legal framework, need to utilize ITS and GPS technologies in traffic management, nationwide rollout of RAIMS, road-condition based bus-route allocation, safety audit at different stages of road development, encouraging private investment for VFTC, delineation of vehicle-free zones within dense settlements, and enhancement of road safety awareness. In addition, one of the important aims for the Health Sector includes balanced development and extension of health services at the federal, provincial, and local levels.

LEGAL FRAMEWORK

The Constitution of Nepal guarantees equal access to health services and obliges the state to make the

¹ *Emerging Issues and the Busan Ministerial Conference on Transport, ESCAP, 2007*

transportation sector safe, systematic, and disabled-inclusive. Besides, the Civil Code is quite comprehensive and ensures effective enforcement of legal arrangements.

The laws relevant to road safety are Vehicle and Transport Management Act -1993, and Rules -1997, Public Roads Act -1974, Police Act -1955 and Rules -2014, Road Safety Committee Formation and Operation Guidelines -2016, Labor Act -2017 and Rules -1993, and the Road Safety Bill under promulgation. All these laws have been enacted sometime back and need to be updated considering the current and foreseeable road safety trends, and the new federal structure of government.

UN LEGAL TOOLS

Nepal is committed to the 2015 Agreement on Sustainable Development Goals with targets for a 50% reduction in road traffic death and injuries by 2020 and provide safe, affordable, accessible and sustainable transport systems by 2030. The 3rd Global Ministerial Conference on Road Safety² has extended the target date to 2030 while added new global commitment to realize Vision Zero by 2050.

As a responsible UN member country, Nepal needs to ratify the “1968 Convention on Road Signs and Signals” specifying commonly agreed road signs and signals, and road markings. It also specifies the norms for traffic lights and focuses on safe infrastructure, which could contribute to safer roads and mobility. The ratification of “1975 Agreement on Minimum Requirements for Driving Permits” that sets out the minimum requirement of the examiner, theoretical part of the test, practical test, skill sets required, test sequence, duration, minimum standards of mental and physical fitness, could ensure that only proficient and safe drivers enter the road system.

The ratification of the “1968 Convention on Road Traffic” providing rules on all aspects of international road traffic and safety as well as the “1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles” specifying a legal framework for the inspection of wheeled vehicles and the mutual recognition of inspection certificates for cross-border traffic, needs to precede the BBIN initiative. Whereas, the ratification of “1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts”, “1957 Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)” or “1958 Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts” could be undertaken once Nepal becomes a motor vehicle exporter or allows cross-border transportation of dangerous goods through its territory.

GLOBAL PLAN

Following the September 2020 adoption of A/RES/74/299 "Improving global road safety" proclaiming the Decade of Action for Road Safety 2021-2030 by the UN General Assembly, WHO and the UN regional commissions, in cooperation with other partners in the UN Road Safety Collaboration, have developed a Global Plan for the Decade of Action³.

The Global Plan is based on the Stockholm Declaration, by emphasizing the importance of a holistic approach to road safety, and calling on continued improvements in the design of roads and vehicles; enhancement of laws and law enforcement; and provision of timely, life-saving emergency care for the injured. The Global Plan also reflects the Stockholm Declaration's promotion of policies to promote walking, cycling and using public transport as inherently healthy and environmentally sound modes of transport.

The global plan is built on the Safe System Approach which:

- anticipates and accommodates human errors;

² <https://www.roadsafetysweden.com/about-the-conference/stockholm-declaration/>

³ The second Decade of Action for Road Safety 2021-2030

- incorporates road and vehicle designs that limit crash forces to levels that are within human tolerance to prevent death or serious injury;
- motivates those who design and maintain the roads, manufacture vehicles, and administer safety programs to share responsibility for safety with road users, so that when a crash occurs, remedies are sought throughout the system, rather than solely blaming the driver or other road users;
- pursues a commitment to proactive and continuous improvement of roads and vehicles so that the entire system is made safe rather than just locations or situations where crashes last occurred; and
- adheres to the underlying premise that the transport system should produce zero deaths or serious injuries and that safety should not be compromised for the sake of other factors such as cost or the desire for faster transport times.

DEPARTMENTAL GUIDELINES

Over the years, Department of Roads has published several technical notes and guidelines based on inhouse research and wide consultation with the stakeholders. Though still relevant, the guidelines on Heavy Vehicle Management Policy, Design of Safe Side Drains, Road Safety Audit Manual, Delineation Measures, Safety Barrier, Safety at Bridges, Identifying and Treating Accident Sites, Road Users' Guide, and Traffic Sign Manual need to be updated to incorporate recent developments and best practices in Nepal and elsewhere.

On the other hand, the guidelines published by Department of Transport Management on Workshops and Repair Centers, Bus Route Allocation, Loading Control of Goods Vehicles, Operation of Driver Training Centers, Vehicle Fitness Inspection and Testing, Vehicular Emission Test, Fabrication of Bus Body, and School Buses, are recently published and are being used.

SITUATIONAL ASSESSMENT

In Nepal, the Police is the primary source of data on road crashes and resulting casualties. Although the database management is still paper-based, and all hospital deaths within a certain number of days from the crash might not be a part of the data collection regime, the data quality is satisfactory and helps understand the burden of road traffic crashes.

A total of 2,485 individuals lost their lives in road traffic crashes during FY 17/18 in Nepal. Out of this, 28% were pedestrian, while 44% of pedestrian fatalities involved buses or trucks. It highlights the need for pedestrian facilities, as well as stricter vehicle fitness tests and control of cruising speed for buses and trucks.

In the same period, motorcycles were involved in 38% of all road crashes and accounted for 1,032 road deaths. The death of pillion riders amounted to 26%.

While the age group of drivers involved in road crashes has remained uniform over the years, about half of the crashes are by drivers in the 25-to-40-year age group. Any policy on drivers needs to address this diverse group covering college students on motorcycles, office goers on cars, and commercial bus and truck drivers.

With 646 crashes per 100 km, urban roads have the worst safety record in comparison to 63 and 3 crashes for the same length in Strategic Roads and Non-strategic Roads. On analyzing the crash data over the last five years, there seems to be a rising trend in crashes in both urban and strategic roads.

Reckless driving is recorded as the most common cause of road crashes, followed by driving too fast. In the absence of a modern data collection mechanism, data on the factors contributing to crashes might be subjective, and the unknown causes are likely to be attributed to reckless driving.

Despite rigorous police action against drink-driving, it is reportedly the third leading cause of road

crashes. No evident monthly drinking pattern has been observed in the crash data, highlighting that it does not only pose a concern during festive months, and therefore, strict enforcement is required all year around.

A total of 9,256 km of Strategic, 45,475 km of Non-strategic, and 597 km of Urban Roads can support motorized traffic. The surface of only 60% of Strategic Roads is in good condition, while the condition of other road types is not satisfactory. Road markings are a standard feature in Strategic and Urban Roads. Other features, such as traffic signs and crash barriers are not sufficient, and therefore, fail to provide adequate guidance and safety for road users.

More than 3.5 million motorized vehicles under eleven different categories are registered in Nepal. The actual number of vehicles plying on the road cannot be ascertained as there exist no records of scrapped vehicles. The growth of registered vehicles in different categories ranges from 5% to 9%. Motorcycles dominate the vehicle fleet and constitute about 39% of highway traffic and 62% of urban traffic. The number of bicycles in both the urban and rural areas is in decline.

In addition to numerous privately owned hospitals, there are 6 Regional Hospitals, 11 Zonal Hospitals, 5 Teaching Hospitals, 11 Central Hospitals, 56 District Hospitals, and 13 Small Hospitals under different levels of governments. Service offered across different categories and within the same category differ widely, while the country has only one hospital designated as a trauma care center.

NEPAL ROAD SAFETY ACTION PLAN 2021-2030

The action plan is guided by the UN General Assembly resolution 64/255 of March 2010, its modification through the Stockholm Declaration in February 2020, a review of the local policies and legal frameworks, and situational analysis covering road crashes, road infrastructure, vehicle fleet and health facilities in Nepal.

Achieving a 50% reduction in road fatalities by 2030 implies reducing the annual fatalities to 875, a figure that is about equal to that reported during the year 2006 when vehicle fleet only comprised 18% of today's vehicle population. Thus, a tremendous effort and commitment from all the stakeholders is required to achieve this goal.

A synopsis of the Nepal Road Safety Action Plan for period 2021 to 2030 is as follows:

VISION: Achieve Vision Zero by 2050

GOAL: A 50% reduction in road deaths and injuries by 2030

STRATEGIES:

1. Create an empowering legal framework	<i>(Promulgate Road safety Act, adopt National Road Safety Action Plan).</i>
2. Ratify road safety-related UN legal tools	<i>(Accede to road safety-related UN legal instruments).</i>
3. Take road safety into consideration while designing new roads	<i>(Develop safe design standards, consider requirements of vulnerable road users and create forgiving roads).</i>
4. Improve existing roads with safety considerations prevailing over mobility	<i>(Conduct network-level safety assessment of all roads with findings incorporated into improvement plans, focus on improving quality/safety over increasing road length).</i>
5. Nation-wide rollout of RAIMS	<i>(Use road crash data to detect any pattern, devise preventive measures and examine the efficacy of such measures).</i>
6. Improve vehicle standards	<i>(Require new and existing vehicles to meet corresponding performance requirements as per the UN Global Technical</i>

Regulations).	
7. Regulate vehicle speed	(Ascertain safe speed for different roads or area and enforce the speed limits).
8. Use of protective gear by motor vehicle users	(Enforce the use of helmet by both the motorcycle rider and pillion rider as well as enforce all motor vehicle occupants to use safety belts).
9. Ignorance of traffic rules should not cost lives	(Formalize the mandate of Traffic Police as the focal agency for road safety education and enhance their capacity to fulfill the responsibility).
10. Continue the action against driving under the influence	(Continue enforcement of the legal provision of zero tolerance to alcohol or any psychoactive substances while driving).
11. Promote PPP as the financing model for road safety-related infrastructure and services	(Use PPP as the main funding model to establish and operate roadside refreshment centers, VFTC, issuing driver permits and providing vehicle license plates).
12. Enhance the skill and knowledge of drivers	(Standardize driving test procedure in conformation to the corresponding global standard).
13. Timely emergency care	(Establish and achieve national targets in setting trauma care facilities, first aid, and rescue of road crash victims).

ACTION AREA I, MULTIMODAL TRANSPORT AND LAND-USE PLANNING:

S.N.	Program									Monitoring	
	Activities		Government Level			Execution Period		Responsible Agencies		Target Setting	
	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline
1.1	Introduction of safe system approach as an integral element in land use planning, city planning, road design, transport system planning, and governance	The adoption of a safe system approach is encouraged to achieve road safety targets and is also key recommendations from the Stockholm Declaration 2020									
1.1.1		The approach needs to be reflected in the Road Safety Bill under promulgation	X			X		MOPIT	MOLMCPA, MOUD, MOLJPA	Incorporate safe system principles in the Road Safety Bill.	-
1.1.2		The approach needs to be reflected in land-use plans, settlement development plans, and road network plans.	X	X	X	X		DUDBC	DoLI, MOPIDs, DOR, DOTM, Municipalities	Road safety features will be considered while developing municipality by-laws, urban development bylaws, urban road standard	DUDBC policy guidelines have made provision for traffic management
1.2	Segregation of road users										
1.2.1	Segregate pedestrians, bicycles, NMT, and other slow-moving vehicles from fast-moving vehicles along SRN	With settlements springing up along transport corridors, segregated pedestrian walkway and NMT lane as a part of all road	X		X	X	X	DOR/MoPI D/TID	MOPID, Municipalities	Provisioning to segregate different modes of traffic in all road development projects	Major links to the Indian border have traffic segregated based on speed

S.N.	Program									Monitoring	
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	Roads (atleast at and nearby settlement areas).	construction/ reconstruction/ rehabilitation package needs to be provisioned.									
1.2.2	Segregate fast-moving traffic on opposing lanes whenever the cruising speed is likely to exceed 40 kmph	Only markings (centerlines) are inadequate to segregate opposing traffic to avoid head-on and side-swipe collisions.	X	X	X	X	X	DOR/MoPI D/TID	Traffic Police, MOPIDs	Construction of median island a part of all 4-lane roads. On 3-lane roads and narrow 4 lanes, replace median island with continuous New-Jersey barrier	Though the provision of segregating islands has been made on some important roads (Maitighar-Tinkune, Kathmandu Ring), they lack medians (Note: at Tinkune-Koteshwar, New-Jersey barrier at the center is working well while a central railing on Budhanilkantha road rather acts as a safety hazard).
1.2.3	Bicycles and other NMT to be allowed only on roads suitable for them	Due to their vulnerability, bicycles should not be allowed to mix and compete with the motorized traffic; especially on highways	X	X	X	X		TMO	Traffic Police	Publication of guidelines for bicycle riders providing details on the recommended routes, parking lots, repair centers, and hours of operation	None
1.2.4	Ensure separate operation permits are issued for motorcycles to be used on highways and city roads	The characteristics of motorcycles to be allowed on highways are different than that for city roads	X	X		X		TMO	Traffic Police	Publication of guidelines to issue operation permit to motorcycles	None
1.3	Study on the possibility of authorizing/ prohibiting vehicle use based on the traffic demand, terrain, altitude, and type of road.	Achievement of SDG 9.1 that aims to "developquality, sustainable, reliable, and resilient infrastructure"									
1.3.1	Use of combined passenger-freight vehicles on low traffic roads	Instead of the local practice of using tractors (damages pavement), and bus with roof rack (leading to the overturning of the bus), or truck (little sitting space), vehicles similar to the combined bus-truck vehicles being used in mountainous roads in Europe could be explored for use in Nepal	X	X		X		DOTM	Transport operators, TMO, private entrepreneurs importing vehiclees to Nepal	Form a working group involving motor vehicle importers, body fabricators, and transport operators and consult on the possibility to operate half-bus, half truck type vehicles on certain routes.	The transport demand for goods and passengers at remote settlements is commercially inadequate to operate separate passenger and goods vehicles.

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1.3.2	Standardizing two-wheeler uses	The motorcycle to be used in urban areas should have low engine capacity, comfortable seats, and a holding point for the pillion rider.	X	X		X		DOTM	vehicle importers, TMO	Form a working group involving motor vehicle importers and consult on possibilities to cap engine capacity and other specifications of motorcycles	Sports motorcycles, not meant for pillion riding, and of up to 1200 cc are imported and used.
1.3.3	Safety for bicycle riders	The bicycles should be safe for use during both low (e.g., night-time) and high visibility conditions.	X	X		X		TMO	vehicle importers, DOTM	Form a working group with bicycle importers and consult regarding the supply of standard helmet, lamp, bell, and reflectors	Most of the bicycles in use do not have any protective/safety equipment
1.4	Ascertain and implement blanket speed limit for all categories of roads i.e., SRN, LRN, Urban Roads.	The blanket speed limits dispel the need to erect frequent signs to limit/delimit allowable speed. It would then only be required when the blanket limits could be breached.									
1.4.1	Ordinance on speed zone declaration issued until the Bill on road safety is ratified	Setting speed limits and establishing speed zones that are safe, consistent, and reasonable is a pre-requisite for speed management.	X			X		MOPIT	DOTM, DOR, MOPIDs, Municipalities	Necessary guidelines/ordinance will be developed and enforced for managing speed	As no speed zones are declared, driving at any speed is allowed legally unless there is a posted speed limit sign.
1.4.2	Implementation of traffic calming measures to bring down the cruising speed to the prescribed speed limit.	After setting speed limits and zones, its compliance would require engineering measures designed to reduce speeds, enforcement effort, and education and awareness campaigns targeting driver attitudes and behaviors.			X	X	X	Metro/ Sub-metro municipalities	MOPIDs, Traffic Police, DOR	Necessary guidelines/manuals will be developed for the adoption/selection of traffic calming measures for different categories of roads.	Apart from poorly designed speed humps, no traffic calming measures exist in urban areas.
1.5	Provide safe and comfortable road crossings in urban areas for pedestrians.	Frequent zebra crossings in urban areas disturb the flow of traffic, while the old and disabled are not able to use overhead crossing with steps. The solution could be pedestrian/ bicyclist actuated toucan signals at zebra crossings or ramped underpasses.	X	X	X	X	X	DOR, Municipalities	Traffic Police, MOPIDs	Pedestrians should be able to cross the road at not more than a 7% gradient.	Lack of enforcement and maintenance of pelican crossings installed in 2010 on Kantipath, Putali Sadak and Durbarmarg, have made their use obsolete.
1.6	Declare vehicle-free zones (where deemed	Vehicle free zone are only possible when the		X	X	X	X	TMO	Municipalities , Traffic Police	Development of supplementary infrastructure	Attempts to Make Thamel and Durbar

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	necessary) to improve safety of pedestrians and cyclists (as per MVTMA § 118).	transportation needs of the inhabitants within such zones are taken care of in an alternate way.								such as storied parking lots, higher charges on on-road metered parking, and Park-and-Ride facilities.	Squares in Kathmandu vehicle free failed as the schemes disregarded the mobility needs of the local inhabitants/ businesses.
1.7	Explore mass passenger transport alternatives in Metro and Sub-metro cities.	The, now defunct, trolley bus in the seventies had a fixed timetable, which was possible to maintain because no other vehicles were allowed to use the lanes it plied on. Similar provisions of dedicated lanes could help improve the efficiency of public transport service and promote mass transport systems in urban areas.		X	X	X	X	DOTM	Transport operators, DOR	Formulation of policy and draft bill to bring individual passenger vehicle operators under a mass-transport authority	Many road crashes in the peak traffic hours are found to occur due to illegal competition between public vehicles (operated by different operators) plying on the same route and vying for passengers.
1.8	Develop infrastructure to minimize vehicular traffic in the city cores.	In the absence of zoning restrictions, the declaration of the vehicle-free zone would only be successful when complimentary facilities of parking, catering, shopping, and recreation are developed simultaneously.									
1.8.1					X	X	X	Local Bodies	MOPIDs	Development of overhead/ underground parking lots near UNESCO heritage sites and its surroundings through PPP.	The capacity of existing surface parking lots has exhausted and prompt drivers to practice illegal road-side parking that enhances crash risk.
1.8.2					X	X	X	DOTM	Municipalities , Traffic Police	Incorporate location identifier/chip in Vehicle registration plate and discourage vehicles without permit to drive into the designated area.	The existing registration plates have only one attribute i.e., Province as the location identifier and are insufficient.
1.8.3					X	X	X	TMO	Municipalities , Traffic Police	Develop bicycle lanes and bicycle parking area in the city core and on the roads leading to it	Shared bicycle lanes introduced by Lalitpur municipality; however, enforcement is still an issue to be solved.
1.9	Undertake	The starting,	X	X		X	X	DOTM/TM	Traffic Police,	GIS file for all	Route permit

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	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline
	adequate study prior to awarding route permits for inter-province buses and make necessary arrangements to record routes in an electronic platform	ending and all the obligatory points in the awarded route need to be recorded						O	NRSC, Provincial RSC	routes	awarded but not recorded properly
1.10	Draft road traffic management bill addressing road safety-related issues.	Traffic management and road safety go hand-in-hand as measures supporting one compliments the other. Mobility requirement depends on the type of economic activity, topography, population, and settlement pattern. Thus, instead of the Federal law, Provincial Law with details elaborated on the Municipal rules can better address the local issues.									
1.10.1			X	X	X	X	X	Provincial RSC	MOIAL, TMO, MOPIDs, Local Bodies	To relieve congestion in urban areas: initiate strategies including congestion pricing schemes, entry restriction based on the time of the day and type of vehicles, the minimum number of passengers in cars, maximum parking duration, and parking/ stopping spots for buses and taxis.	Initiatives made by the local community, NGO and Traffic Police in the past were unsuccessful due to lack of support from other sectors.
1.10.2			X	X	X	X	X	Provincial RSC	MOIAL, TMO	Ride-sharing culture will be developed.	Few ride-sharing startups have stopped their operation due to lack of ride-sharing friendly policies.
1.10.3				X		X		Provincial RSC	MOIAL, TMO	Determine routes, frequency, normal/ extended operating hours, normal/ off-hour fare, and size of intra-province	In the past, night bus subsidized by KMC was found to be unsustainable due to low ridership, and services were halted.

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										buses while ensuring sustainability and attractiveness of services.	
1.10.4					X	X		Provincial RSC	MOIAL, TMO	Registration and management of Non-motorised transport (NMT) as data are crucial to planning infrastructures and services.	In the past, it was practiced by city councils.
1.11	Ensure accessibility of public vehicles to all road users including the physically challenged ones.	There are two aspects to it:									
1.11.1		(a) In line with SDG Goal 9.1 and 3.6, accessibility to road network has to be increased to remotest settlements while minimizing road casualty	X	X		X	X	DOLI	NPC, TMO, DOR	Development of a GIS-based national road accessibility model to find settlements still not connected through accessibility audit.	A GIS model developed in 2005 to find the assessment of settlements needs to be updated.
1.11.2		(b) In line with SDG Goal 11.2, safe transport has to be ensured for all road users, including the elderly and disabled		X	X	X	X	TMO	NPC, Traffic Police	Development of a GIS-based model on bus routes and frequency	The paper-based database on route allocation with DOTM and TMO needs to be digitized and disseminated widely
1.12	Strictly enforce the following existing legal provisions.	Until the laws are updated, rigorous enforcement of existing legal tools through additional support of multiple stakeholders should be a priority.									
1.12.1	Ensure vehicles are stopped only at designated locations (as per MVTMR § 122, 125).	Though attempted by the Traffic Police sporadically, stopping at non-designated locations reduce road capacity and increase conflict situations	X	X	X	X	X	Traffic Police	Transport operators, DOTM, DOR, Municipalities , MOPIDs	Enforce parking at road edge or lay-bye for a month each year to help develop a habit among passenger buses	Often buses are found to stop on the middle of the road for embarkation/ disembarkation passengers/goods
1.12.2	Ensure driving only on the designated lane (as per MVTMR § 135).	Driving on centre of roadway on highway and encroaching on opposite lanes on city roads are the reason for head-on collision and carrying capacity reduction of roads.	X			X	X	Traffic Police	Transport operators, DOTM, DOR, Municipalities , MOPIDs	Enforcement for driving in the allocated lane in the highways for a month each year and in city roads every day. Construction of median barriers a part of every road development project with more than 2	In highways, drivers tend to drive in the center and in the city roads motorcycles tend to encroach opposite lanes

S.N.	Program									Monitoring	
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	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		roads. A simpler system that is reliant on secondary data and could be used for assessment on an annual basis needs to be explored so that the planned activities are economically sustainable. Alternatively, safety assessment could be carried out by local experts using ViDA while maximizing the use of secondary data collected for other purposes (e.g., traffic count for AADT, video for SDI).									
2.1.1			X			X		MOPIT/DOR	DOTM, Traffic Police/Academica	Assessment of SRN	None
2.1.2				X	X		X	MOPID/TID/DOLI	DOTM, Traffic Police/Academica	Assessment of City Roads and LCN	None
2.2	Nation-wide rollout of web-based road crash database and dissemination of data to the relevant concerned agencies.	The RAIMS piloted along Kathmandu-Birgunj corridor needs to be expanded throughout the country. Data, filtered to suit the intended use, needs to be availed to agencies to devise preventive measures and to evaluate the performance of implemented measures.									
2.2.1		No agency is legally responsible for collection and analysis of road crash data	X			X		Traffic Police	TMO/NRSC	Legally mandate and assign the responsibility to record and upload crash data to Traffic Police.	A pilot project on web-based road crash data collection has been introduced, and under implementation along the KTM - Birgunj industrial corridor.
2.2.2		Once the responsibility to collect crash data is assigned, extent of access to the database to be ascertained	X	X	X	X		Traffic Police	NRSC	Data sharing modality will be established (who can access which part of the data)	Data is availed upon formal request
2.2.3		Capacity building to improve data quality	X	X	X	X		Traffic Police	NRSC	A separate dedicated unit will be established with adequate human and technical resources for	Couple of training was organized and given to few Traffic Police personnel during the pilot phase

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	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
										managing data at the Federal, Provincial, and Local level.	of RAIMS.
2.2.4		To make RAIMS datasets comprehensive, it should be linked with the HMIS database. As there could be many health facilities within a district, Traffic Police (the custodian of RAIMS) needs to be given non-editing access to HMIS.	X	X	X	X	X	Traffic Police	MOHP/ NRSC	Amend Health Sector Masterplan to record mortality and morbidity of road crash victims into HMIS and periodic reconciliation between RAIMS and HMIS datasets.	There is no mechanism to include hospital deaths of road crash victims in RAIMS unless the Police Officer on duty at the hospital reports it.
2.3	Production of a pool of qualified Road Safety Auditors through training and certification.	The Train-the-trainer (TOT) and other continuous professional development (CPD) activities on road safety should be conducted regularly to build the capacity of local experts.	X			X	X	DOR	Institute of Engineering (IOE), Centre of Excellence on Road Safety, Roads Board Nepal	Train and participate 10 auditors in at least one audit per year	DOR in collaboration with ARRB conducted a TOT on road safety for 40 participants
2.4	Encourage local training establishments to run training modules to enhance the capacity of road safety-relevant institutions.	Engaging local institutions in training and imparting road safety knowledge would ensure the sustainability of the planned activities and training programs	X			X	X	MOEST	DOR, DOLI, DOTM, Traffic Police,	Training calendar of DOR, DOLI, Police, DOTM to include road safety to train staff at federal and provincial levels	Traffic Police Academy conducts regular training for Police personnel. DOR and DOTM organize workshops.
2.5	Establish mandatory provision for conducting road safety audits and its implementation on all categories of roads during different phases such as Feasibility, DPR, Construction, Pre-Opening, and Operation stage.	Most GOB funded SRN Road projects lack RSA, while those involving RSA fail to incorporate recommendations due to budgetary limitations. Whereas in externally funded projects, RSA is done at the pre-opening stage when the fund is usually limited, and the project is under time-pressure to complete and is therefore removed from the work contracts. On non-SRN roads, there is no provision for RSA.	X			X		NRSC	DOR, DOLI, DOTM, Municipalities, Traffic Police, MoPID, TID,	Mandate the need for RSA at different stages of road development and rectification of qualified findings through its inclusion in the Road Safety Bill	A guideline on RSA and standing order to use it for SRN roads issued in 1997
2.6	Pilot Intelligent Transport System with traffic actuated signals, remote monitoring and control of traffic	The current pre-timed signal system cannot dynamically respond to traffic fluctuations. The efficient	X	X	X	X	X	DOR, MOPIDs	Municipalities, DoTM, Traffic Police	All future installation of traffic and toucan signals to be road user actuated and integrated with	Traffic signal system with pre-programmed timings has failed in Kathmandu not only for

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	speed and flow, SMS/email delivery of traffic violation tickets, and so on.	deployment of Traffic Police personnel requires central control.								central control.	technical reasons but also because of the VIP culture, characterized by traveling in a large entourage.
2.7	All externally funded roads projects to be developed as model links by addressing all the 5 Action Areas and evaluate results for future replication	It is essential to collect baseline data, analyze crashes, and evaluate safety intervention/improvements periodically (after a certain period e.g., 5 years) to ascertain the effectiveness of the interventions. Equipping the Traffic Police offices with necessary logistic support along the corridor should be a part of the road improvement projects.									
2.7.1			X	X	X	X	X	DOR, DOLI	National/ Provincial RSC	Kilometers of road designed/ constructed with the consideration of a safe system approach.	No archive on safety (and other) issues considered in design/ improvement
2.7.2			X	X	X	X	X	DOR, DOLI	National/ Provincial RSC	The number of case studies on lessons learned published.	No formal documentation so far except a 1987 ICIMOD publication on LJ Road
2.8	Develop roadside amenities, truck/ bus laybys, and refresh center for long route drivers	Although the laws require that the drivers on long routes should take frequent breaks, this is not possible in the absence of parking facilities with proper resting places. Planned wayside amenities could also boost the local economy in addition to making the journeys safer.	X		X	X	X	DOR	Municipalities, Traffic Police	Development of wayside amenities along National Highways made a part of road improvement projects. The amenities to be operated through PPP.	Many unplanned settlements along highways in Nepal tend to develop from the stopping locations for drivers.
2.9	Acquiring and maintaining right-of-way beyond road edge for all categories of Roads	Although land acquisition for road construction is expensive, provision of at least 2-3 m narrow strip beyond the road edges would considerably reduce the chances of road crashes through segregation and improved visibility.	X			X	X	DOR	Traffic Police	Declaration of 6m setback from the edge of all SRN roads in line with PRA § 3Ka.	The current trend of acquiring a narrow strip of land for road development: enough only for pavement and shoulders, limits the availability of safe road space for both motorists and VRU's.
2.10	Issue operation	Goods vehicles of	X	X		X		TMO	Traffic Police	Publication of	None

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	new roads	roughness enhance crash risks, damages vehicles, and causes fatigue to road users.									
2.13.1			X			X	X	DOR	NPC, MOF, RBN	Instill concept to prioritize periodic maintenance of roads based on the traffic volume	Periodic maintenance is prioritized as per the strategic importance of roads.
2.13.2			X	X	X	X	X	DOR, MOPIDs, Municipalities	NPC, MOF, RBN	Initiate systematic elimination of traffic bottlenecks as a part of road development package (caused by abruptly narrowed intersections, road sections, culverts, inadequate extra-widening at sharp curves, etc.).	Periodic maintenance is prioritized as per the strategic importance of roads.
2.14	Update and develop design guidelines on safer roads										
2.14.1	Update the existing RSA Manual based on the safe system assessment framework for all categories of roads	The existing RSA Manual is based on the old 3-E concept of road safety and the checklists presented are inconsistent with a safe system. It needs to be updated to the Action Area basis to match the devolution of power as per the new constitution, the achievement of SDG Goals, global trend, advancement in road construction, and situational analysis of road crashes in Nepal. It would ensure uniformity in conducting and reporting road safety audit recommendations.	X	X		X		MOPIT	DOR, DOLI, DOTM, Traffic Police	RSA manual will be updated	A road safety audit manual was developed in 1997.
2.14.2		Considering the cross-drainage structures on the road networks have become crash blackspots and traffic bottlenecks, the existing Road Safety Note on Safety at Bridge needs to be revised	X	X		X		NRSC	DOR, DOLI, DOTM, Traffic Police	RSN on Safety at Bridges will be revised	A safety note on safety at bridges was developed in 1997.

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		and updated.									
2.14.3		The Road Safety Notes and Traffic Sign Manual developed in the past have now become obsolete.	X	X		X		NRSC	DOR, DOLI, DOTM, Traffic Police	Notes on side drain, barrier, delineation, treating crash sites, and Traffic Sign Manual need to be updated	The previous versions were published in 1998.

ACTION AREA III, VEHICLE SAFETY:

S.N.	Program									Monitoring	
	Activity		Government Level		Execution Period		Responsible Agency		Target Setting		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
3.1	Accede and adopt the "1958 UN Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts" defining the minimum requirements that automobiles must satisfy in order to be approved for sale or use.	Though Nepal neither produces nor exports motor vehicles, the accession will help to curb import of substandard spare parts, accessories and any alteration failing to match the vehicle's originally designed properties.	X			X		MOPIT	MOLJPA/ NRSC	Adoption and implementation of the 1958 UN Agreement	In the absence of mechanisms to check the quality of locally available automotive parts and accessories, it is not known if motor vehicles of local brands manufactured in the neighboring countries are as per the global standards and if their mode of use in Nepal had been considered in the manufacturing and testing process.
3.2	Establish VFTC conforming to the 1997 Convention on Technical Inspection of Vehicles in all provinces with the capacities matching the legal test frequency for each type of vehicle within a year.	With the recent rise in the number of crashes due to mechanical failures, the insufficient number of VFTC's in operation in the country hinders the assessment of the roadworthiness of vehicles.									
3.2.1			X	X		X	X	DOTM	TMO, MOPIDs, FNCCI, PPC	At least one VFTC will be established in each province under the PPP model.	There is one VFTC in Bagmati Province that is currently working under capacity and also lacks adequate equipment.
3.2.2			X				X	NRSC	MOLJPA	Accede the 1997 Convention on Technical Inspection of Vehicles and incorporate the provisions in	VTMA § 39 (VTMR Chapter 8) has defined a few conditions to operate repair centers.

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
										VTMR.	
3.3	Develop a national standard for vehicle accessories such as brake, tire, and seatbelt in conformity to the 1958 Agreement on Vehicle Regulations.	With a few local entrepreneurs starting to manufacture motor vehicle accessories, the corresponding standards need to be set	X				X	NBSM	NRSC, FNCCI	Set National standard for motorcycle helmet as well as seats, seatbelts, tires, and brake lining	Nepal used to produce tires for a few types of motor vehicles in 1992. Recently, the standard for helmets has been approved. The standards need revision based on road crash data.
3.4	Control overloading of freight trucks through the installation of weighing stations at border crossing points and along major trade corridors.	Though policies against overloading have been drafted by DOR and DOTM, overloading of trucks and resulting crashes cannot be minimized unless suspected trucks are forced to drive over weighing bridges. As it is difficult to unload some cargo (eg: fly ash) from across the border once they get into Nepal, the axle load needs to be checked at the border crossing points as well.									
3.4.1			X			X	X	DOTM	Transport operators, Traffic Police, DOR	Establish or operate under PPP model a weighbridge in each 50km of CRN roads.	15 weighbridges operated by Federation of Truck Transport Entrepreneurs
3.4.2			X			X	X	DOTM	Transport operators, Traffic Police, DOR	Establish a national database linking weighbridges at border crossing points and on highways	There is no system to share data among NITDB (border crossings), private operators (on highways), and DOTM for assessment of the seriousness of the vehicle overloading problem, and the implementation of vehicle overload control laws and regulations.
3.5	Establish a modality to encourage public vehicle operators to maintain a better safety record.	Very important but difficult to verify unless vehicle registration data is in electronic format and is accessible whenever action against a goods or passenger vehicle has to be taken.						Traffic Police	DOTM, TMO	Provision of financial incentives during vehicle renewal (E.g. low or no renewal fee etc.) will be established and implemented.	It is customary for the Traffic Police to felicitate a few taxi drivers during Traffic Safety Weeks
3.6	Establish a	A centralized	X	X		X	X	TMO	Traffic	Establish a	Paper-based

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	centralized vehicle database system integrating vehicle registration, periodic inspections, and maintenance.	vehicle database to monitor their roadworthiness is essential for police works as well as to encourage the private sector to invest in VFTC, service centers, international driving test centers, and so on. It also helps in determining the right make/model for certain topography, and other commercially sensitive parameters.							Police	provincial and national database to keep the record of initial registration, vehicle use authorization, inspection history, crash history, ownership history, and driver history. Grant access to the registration data to all TMO and Traffic Police Offices, and disseminate regularly on the official website.	vehicle registration database at TMO records only ownership history. Data on decommissioning of vehicles and the re-registration in a different Zone are not updated.
3.7	Ratification of 1997 Agreement for the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles	The agreement provides a legal framework for the inspection of wheeled vehicles and the mutual recognition of inspection certificates for cross-border traffic.	X			X		MOPIT	MOLJA, DOR, DOTM	Ratification of the 1997 convention	The parameters for the roadworthiness test of vehicles in VTMR are inadequate to ensure that only safe vehicles are allowed to ply on the road. The same is the case in other BBIN countries.
3.8	Amend the Guidelines on vehicle fitness inspection and testing to include maintenance workshops to be recognized by the vehicle manufacturer and qualification of authorized mechanics.	One of the conditions set by vehicle manufacturers and insurance companies is that the maintenance needs to be done at authorized workshops and by qualified personnel only. The guidelines need to be amended to comply with the 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles	X			X	X	TMO	DOTM	Establishment of manufacturer accredited workshops at roadside amenities under the PPP model.	Maintenance of motor vehicles is mostly done at non-certified roadside shops by underqualified staff. It has resulted in the vehicle manufacturer not accepting responsibility in case of mechanical failures and insurance companies declining to honor the policies.
3.9	Explore the possibilities to authorize the private sector for testing the vehicles and issuing driving permits.	It can facilitate to clear the backlog of testing of vehicles and issuance of driving permits.	X	X		X		TMO	FNCCI, Traffic Police	A study commissioned to explore the possibility and required legal framework	At present, DOTM has taken PPP initiatives and been conducting driving tests at privately-owned test centers.
3.10	Strictly enforce the existing legal provisions on compulsory insurance against motor vehicle crashes	The suspension of the compulsory insurance clause has been argued in the pretext of increased travel fare to cover	X	X		X	X	DOTM	Traffic Police	Minimum insurance threshold specified; Registration/ renewal only upon proof of insurance.	Despite legal provision, the implementation has been made compulsory for only private vehicles (cars).

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
3.12.1			X			X		Traffic Police, Transport operators	DOTM	Launch a pilot project to demonstrate benefits of real-time monitoring by installing commercial vehicles operating along two highway sections with a tracking device	Sajha Yatayat, a few private bus operators, school buses, and UN agency vehicles have implemented a GPS vehicle tracking system.
3.12.2			X			X	X	Transport operators	DOTM, TMO Traffic Police	Tracking devices will be installed on all commercial vehicles and linked with the centralized vehicle tracking/monitoring system	Neighboring countries have already mandated to manufacture buses and trucks with GPS device.

ACTION AREA IV: SAFE ROAD USE:

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
4.1	Ratification of various convention, UN Resolution and guideliness										
4.1.1	Ratification of the 1975 Agreement on Minimum Requirements for Driving Permits	This agreement set out the minimum requirement of the examiner, detailed testing procedures i.e., theoretical, practical, skill testing, test sequence, duration, minimum standards of mental and physical fitness etc.	X			X		MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1975 agreement	Many elements of the agreement are not covered by the driving tests procedure and test content in Nepal
4.1.2	Ratification of BBIN should be preceded by the 1968 Convention on Road Traffic	BBIN would enable unhindered traffic movement between Bangladesh, Bhutan, India, and Nepal. Thus, a set of rules applicable to international traffic is of utmost importance as there exist considerable differences between the local laws in the 4 countries.	X			X		MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1968 convention	The local laws in BBIN countries lack unified provisions on what drivers and pedestrians must do at crossings and intersections.
4.1.3	Aligning the existing legal tools for compatibility with the ratified UN resolutions	To ensure full compliance and to avoid confusion, the local laws need to be amended to	X	X		X		MOPIT	MOLJPA, MOIALs, MOPIDs, DOR, DOTM	Amendment of local laws to incorporate the provisions in the conventions	A few provisions of the UN legal tools are already incorporated in the existing local laws

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		incorporate the provisions in the UN legal tools.									
4.1.4	Amend MVTMR to accommodate a list of offenses, violation of which on incremental basis is made proportional to the duration for which a driving license would be suspended.	As observed in other countries, instead of the present practice of imposing only monetary fines against traffic rule violation, suspension of driving license for an exponential longer period (and total ban on driving during the suspended period) would be a better deterrent.	X			X		DOTM	MOLJA	Amend MVTMR to ban driving for a different duration based on the corresponding seriousness of the offense committed.	A financial penalty is imposed based on the seriousness of the violation. However, the vehicle is allowed to be driven by the violating driver
4.2	Update the list of etiquette for the driver, conductor, and passengers in the Public Transport Code of Conduct 2067 based on 1968 Convention on Road Traffic. Also include the percentage of standees allowed in different passenger vehicles; essential carry-on tools and spares; accessibility for the elderly and disabled.	Many of the common etiquettes: to keep the doors closed, no loud music, helping the disabled and elderly, no force packing of passengers, not stopping on the middle of driving lanes, no unlisted stops, list of essential tools and spares to carry, the maximum size of passenger carry-on baggage, and so on needs to be added to rule out chances of crashes.	X			X		DOTM	Traffic Police, DOR	Publish the revised version of Highway Code "Sadak Prayogkarta Nirdeshika" addressing contemporary traffic management and road safety issues with pedestrians, cyclists, motorcyclists, and drivers of commercial vehicle	The present version of the Highway Code was published in 1998
4.3	Conduct nationwide road-safety awareness campaigns.	The road safety awareness campaigns in schools being conducted by Traffic Police needs to be extended to marketplaces, city centers, and rural communities to improve safety awareness general public and across all age groups. The Police need to be provided with necessary support (financial, technical, administrative, etc.) by other agencies. All road safety education activities should be based on the themes so that their effectiveness could be assessed	X	X	X	X		Traffic Police / Provincial RSC	Provincial RSC, MOEST, Schools, Municipalities, NGO	On an annual basis, conduct at least one program per school and ensure one program is carried out by each school in each local bodies. Each year Provincial RSCs should come up with a list of road safety themes, based on the road crash/casualty pattern.	In the year 2018/19, Traffic Police successfully carried out 11,075 and 817 awareness programs in schools and communities, respectively. Different agencies have different approaches to safety education which at times fails to address the current road safety issues and needs

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		later. The government advertisements on different media platforms. A part of this could be for safety issues.									
4.4	Accommodate road safety in the next revision of formal and informal education curricula, teachers' guide, and standard reference material.	Although some of the textbooks used in private schools cover few components on road safety, its inclusion in the school standard curriculum with age-appropriate contents and scope could help induce safe road-use behavior from a young age.	X	X		X	X	MOEST	Curriculum Development Center, National/ Provincial RSC	A chapter on road safety in the text book for each level in school through amendments in: (i) Child Development Center Curriculum; (ii) Outline for School Level Curriculum 2076; (iii) Outline for Local Level Curriculum Development and Implementation Guidelines 2076; (iv) Curriculum and Text Material Development Guidelines 2073; (v) Curriculum for Gumba, Madarsha, Gurukul, Mudhum and Intellectually Disabled.	A few elements of road safety components are covered in the textbooks used in private schools for up to class 5.
4.5	Promote School Zone Safety Program.	A school zone safety program could help improve child pedestrian safety in school zones and reduce injuries and fatalities. If its provision is included in the Road Safety Bill, the application could be made uniform throughout the country.									
4.5.1			X				X	MOPIT	MOLJPA, Traffic Police, DOTM, NGO	Mandate setup of safe school zone programs as a part of the Road Safety Bill as well as Star Rating for School Program..	Not specifically stated in the draft Bill
4.5.2			X			X		DOR	Traffic Police, DOTM	Publication of a separate technical note on school zone safety	DOR has been installing a couple of warning signs and zebra markings during the development of

[illegible]

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	Agreement on Minimum Requirements for Driving Permits										
4.10.1		The requirement of the examiner, theoretical part of the test, practical test, skill sets required, test sequence, duration, minimum standards of mental and physical fitness as specified by the UN convention could be adopted to attain uniformity with international practices.	X	X		X	X	DOTM	TMO, Traffic Police	Uniform test parameters and procedure throughout the country	Only limited parameters as specified in the relevant UN convention has been followed.
4.10.2		In addition to the issuance of driving permits based on vehicle categories (e.g., motorcycle, car, bus, etc.), purpose-based (e.g., personal use, city taxi, long route commercial buses, trucks, etc.) categories could also be explored and develop separate test procedures considering differences in crash risks and hazards between occupational and non-occupational drivers.	X	X		X	X	DOTM	TMO, Traffic Police	Further categorization of driving permits based on the purpose of driving.	The driving test procedure covers only a few elements, as specified in the relevant convention.
4.11	Provision for a compulsory refresher course on traffic management and road safety during the renewal of the driving license.	The driving permits are renewed every 5 years. Numerous changes relevant to road safety and traffic management might have taken place over this period. A refresher course could help drivers understand new and existing traffic laws, and improve confidence and driving skills. With the curriculum developed, driving training centers could run such a course.									
4.11.			X			X	X	DOTM	MOLJPA,	Make	The present law

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
1									TMO, Traffic Police	amendments in MVTMR for compulsory refresher training for all drivers at the time of driving license renewal	requires proof of training participation only at the time of getting a license for the first time.
4.11.2			X			X	X	TMO	Traffic Police	Develop and maintain an electronic database of drivers with event history including traffic violations committed, courses attended, etc. accessible at every Traffic Police office.	There is a paper-based database at present
4.12	Provision for compulsory participation in upgrading training for drivers i.e., from motorcycle to car, car to heavy vehicle, conductor to bus/truck, heavy equipment to motorcycle/car, etc. as well as from one purpose to another (private to the professional driver).	The mechanical properties, carrying capacity, maneuverability, and blind spots vary for different types of vehicles, adding to the complexity in driving behaviors and knowledge. Thus, each change/addition of a vehicle type should require vehicle type-specific theory classes and tests.	X			X	X	DOTM	MOLJPA, TMO, DOTM, Traffic Police	Make amendments in MVTMR to require training participation for each change/addition of vehicle type in driving license while renewing driving license	In the present licensing system, the drivers need to take a written test only once. Whereas, separate practical tests are required for each type of vehicle.
4.13	Introduce incentives for commercial drivers/operators having crash-free records for a year	Provision of incentives (financial, concessions of taxes, etc.) for drivers/operators can help encourage safe driving behaviors. However, the selection criteria need to be objective and transparent.		X		X	X	Provincial RSCs (Traffic Police until Provincial RSC are formed)	DOTM, TMO, MOPIDs, Traffic Police, NGO	Felicitate drivers/operators in a province.	Traffic Police has been felicitating a few drivers.
4.14	Strengthened traffic monitoring through increased patrolling and remotely through CCTV along SRN, PRN and local roads	Due to difficulty in managing travel logistics, the patrolling is limited to nearby urban areas along good roads.									
4.14.1			X	X		X	X	Traffic Police	TMO	Each Traffic Police unit to develop /implement a patrolling plan.	Highway patrolling is mainly limited to escorting VIP entourages.
4.14.2					X	X	X	Traffic Police	Municipalities	Traffic monitoring at	Electronic monitoring started

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
										known road crash blackspots remotely through CCTV	in Kathmandu Valley
4.15	Enhance enforcement capacity of Traffic Police	Although the basic office and living requirements of Traffic Police are covered by the Federal Government, the resources required for effective traffic management and road safety are tightly stretched within the organization.									
4.15.1		Equipment and tools could be bundled into the cost of a adjacent major new road development project as the police tasks increase many folds with the increment in the road network.	X	X		X	X	NPC	MOF	All Traffic Police below District Traffic Police Office to be provided with a minimum set equipment and tools.	Many Traffic Police personnel have been relying on irregular public transport to reach to crash sites and schools.
4.15.2		The cost of the minor equipment required to assist during road closures could be bundled into the cost of adjacent major new road development projects.	X	X		X	X	NPC	MOF	Each Traffic Police along SRN to get simple equipment such as winches, metal cutter, and chain-saw, to disentangle crashed vehicles, and remove obstructions (fallen tree/boulders)	Due to the lack of simple equipment at disposal, rescue of crash victims and clearing of the road from obstructions is delayed.
4.15.3		In mountainous areas, a heavy crane needs to be available within a couple of hours distance to pull out buses/trucks falling into the valleys	X	X		X	X	NPC	MOF	Traffic Police Offices at 100 km interval along SRN to get a 25MT crane	The Traffic Police do not have any such equipment. As a result, pulling out the erring bus/truck from the valley takes days.
4.15.4		Without speed measuring equipment, enforcement of speed limits will remain subjective. However, provision of a GPS vehicle tracking system covering the road link would help avoid the need for separate speed measuring setup and additional costs associated with it.	X	X		X	X	NPC	MOF	Traffic Police offices need to be equipped with speed measuring apparatus (fixed or mobile), next to road links where speeding is likely	Police only have a handful of speed guns at their disposal for speed limit enforcement.

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
4.15.5		Computer setup and internet connectivity are pre-requisites for the planned countrywide rollout of RAIMS and GPS vehicle tracking	X			X	X	NPC	MOF	Equipping all Traffic Police offices with basic computer setup and internet connectivity	Provided where RAIMS is being piloted.
4.16	Scope out the responsibility of Traffic Police to Municipal Police for regulating vendors from pedestrian walkways.	Scoping out the responsibility to municipal police relieves traffic police of additional work burden and can effectively focus on other traffic management issues.	X	X	X	X	X	Traffic Police	Municipal Police	No vendors on pedestrian walkways except in sections specifically permitted by the municipality	Removal of vendors and other obstructions are subjected to the priority set by the commanding officer
4.17	Strictly enforce the following existing legal provisions for safer road users:	Rigorous enforcement of existing legal tools through additional support of multiple stakeholders can help trigger safe road use behavior among road users.									
4.18	Ensure that vehicular traffic honor pedestrians' right on zebra crossings when being used (as per MVTMR § 132).	There is no point to paint zebra markings if vehicles do not stop at it when pedestrians cross the road.		X	X	X	X	Traffic Police	Transport operators, TMO	Continuous enforcement at zebra crossings for a month each year to help develop an involuntary reflex to stop.	Police officers give priority to vehicular traffic even when pedestrians are crossing the road on zebra crossings. The zebra crossing markings are not periodically maintained.
4.18.1	Ensure that pedestrians honor the right of vehicles on driving lanes (as per MVTMR § 136, 137).	Jaywalking prevents the vehicular traffic to maintain uniform cruising speed and increases the risk of road crashes		X	X	X	X	Traffic Police	Transport operators, TMO	Systematic improvement of footpath and road carriageway by clearing physical obstructions (eg: utility poles, tree stumps), removing vendors/ parked vehicles, surface improvement, and railing at intersections to encourage pedestrian to use the footpath.	Due to congested footpath and lack of pedestrian-friendly crossing facilities, pedestrians tend to spill on the roadway and are forced to cross the road from wherever they feel convenient or safe.
4.18.2	Ensure nationwide erection of speed control sign and publish notice on speed zones		X	X			X	DOR	DOTM	Number of Speed signs installed	Traffic signs are not adequate in most of the roads.
4.18.3	Ensure the compulsory use of seat-belt by front-seat car passengers and the use of helmets by all	Seatbelt protects vehicle riders from lurching dangerously forward when brakes are applied. Pillion riders are	X	X		X	X	Traffic Police	TMO	Ban on car passengers without using seatbelts; Ban on motorcycle pillion riding without helmets;	Drivers of cars are required to use seatbelt; Motorcycle riders are required to wear helmets. Traffic Police have

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	motorcycle riders (as per MVTMA § 130).	less aware of danger and thus need to protect their heads.								At the time of registration, the long-distance buses to require seat-belts on all seats.	taken action against 50,969 drivers in the year 2018/19 for not using seatbelts. However, there have only been a few attempts for pillion riders to require helmets.
4.19	Ensure availability of trained workforce for effective monitoring and implementation of the prevailing provision of VTMR § 140, 157, 158	Appointment/ deployment of Mobile Transport Inspectors	X	X		X		DOTM	TMO, Traffic Police	Appointment/ deployment of Mobile Transport Inspectors throughout the country	The legal provisions do not allow Traffic Police Officers to impose penalties higher than NPR 200 for a traffic offense. Even for many serious offenses, the Police Officers need to escalate the cases to DOTM or the corresponding TMO, causing unnecessary delays.
4.20	Real-time information on traffic condition and safety issues for the drivers through FM, mobile app, and SMS alerts at the provincial level.	The single FM broadcast from Kathmandu fails to cover other parts of the country while the traffic updates broadcasted for the valley are not in real-time. Consequently, drivers are not tuning to it and thereby sometimes missing important announcements (e.g., road closure).		X		X		Traffic Police	Municipalities	All Provincial Traffic Police Office to establish and maintain their FM stations or feed information to a local station.	Metropolitan Traffic Police Division broadcasts through their 0.5 kW FM. The detail of the information is often inadequate for the drivers to make travel decisions.

ACTION AREA V, POST-CRASH RESPONSE:

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
5.1	Establish a Road Safety Unit at Department of Health Services	A focal point is required at Department level for (a) coordination with NRSC, Provincial RSC, WHO, and other NGOs; (b) to ensure the road safety-related activities get due attention in the department's yearly and periodic plans; (c) to ensure the department's responsibilities on	X			X		DOHS	MOHP/ NRSC	Road safety Unit will be established	The road safety agenda is being managed by the ministry on an ad hoc basis

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		road safety are fulfilled.									
5.2	Introduce a nationwide toll-free number and Unified Command Centers to address severe road crashes.										
5.2.1	Pilot an Unified Command Centre (UFC)	The UFC with a toll-free number, will mobilize: (a) a rapid response team with crane and extrication tool for rapid evacuation of crash victims from wrecked vehicles; (b) appropriately manned and equipped ambulance; (c) Traffic Police personnel to cordon the site and to divert traffic.	X			X		MOHA	NRSC, Nepal Police, National Trauma Center	Establishment of: (a) Pilot UFC with toll-free number; (b) Protocol for communication and mobilization of Rapid Responder Team, ambulances, and traffic police	None so far
5.2.2	Rollout Unified Command Center in Provinces	The UFC with a toll-free number, will mobilize: (a) a rapid response team with crane and extrication tools for rapid evacuation of crash victims from wrecked vehicles; (b) appropriately manned and equipped ambulance; (c) Traffic Police personnel to cordon the site and to divert traffic.		X		X	X	MOIAL	PRSC, Provincial Police, Provincial Trauma Centre	In each province, establishment of: (a) UFC with toll-free number; (b) Protocol for communication and mobilization of Rapid Responder Team, ambulances and traffic police	None so far
5.3	Establish a Ambulance Dispatch Center at each District Hospital.										
5.3.1	Empowerment of the Ambulance Dispatch Center	The current practice in ambulance services is characterized by the need to contact ambulance service provider at their private number, negotiate fares, and the health facility to be taken. This results in considerable delays in transporting and handover of crash victims to medical staff/facilities. The center should be empowered to administer ambulances under diverse ownerships	X	X		X		MOHP	Provincial/District hospitals	Establishment of an ambulance dispatch center taking calls 24x7 at all District Hospitals to inform the ambulance stationed nearest to the requested location to attend and get the patient to the nearest suitable facility.	At present, the ambulance service providers may render or deny the service. There are also reports that the ambulances are paid by the costly private hospital to deliver the patients to them.

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
		and temporarily function as the UFC until it is established.									
5.3.2	Establish an SOP for medical staff in the ambulance and the health facility receiving the patient.	The Ambulance Service Operation Guidelines 2073 lists the equipment and professionals for class A and B ambulance as well as the code of conduct for the ambulance driver. However, the protocol for medical staff in the ambulance and the health facility receiving the patient remain undefined.	X			X		MOHP	National Ambulance Operation Coordination Committee	National protocol established	The doctor/ paramedics, if any, in the ambulance and the health facility receiving the victims usually lack preparation.
5.3.3	Avail a mobile app to the general public showing the location of nearby ambulance dispatch centers, their contact details, and health facilities nearby	Such a mobile app may come very handy for road crash victims, drivers, conductors, and local rescuers.	X	X		X		National Ambulance Operation Coordination Committee	MOHP/Provincial Government	Develop and launch an ambulance tracking app	Difficult to locate ambulance in case of need as each needs to be contacted using private (often unknown) telephone numbers
5.3.4	Facilitation and monitoring of service provided by ambulance owners to ensure ambulances are equipped with necessary equipment, medical supplies, and qualified personnel.	The District Ambulance Service Operation Committees need to monitor and facilitate them.	X	X	X	X	X	National Ambulance Operation Coordination Committee	MOHP, Provincial Government, Municipalities	Develop a monitoring and rewarding framework to monitor the number, frequency, and quality of the service every year.	At present, most of the ambulances in operable condition are either privately owned or belong to communities, and lack proper monitoring after registration.
5.3.5	Introduce a certified ambulance driver training	Ambulance driver training is required as not everyone able to drive a vehicle is qualified to drive an ambulance.	X	X		X		National Ambulance Operation Coordination Committee	MOHP, CTEVT, Civil Societies	Develop a short course covering the protocol to be followed by ambulance drivers	The present practice of learning on the job is not adequate to help the medical staff in attending the patient during embarkation, disembarkation and in the ambulance.
5.4	Establish guidelines for air ambulance service through scheduled flights as well as emergency flights.	The National Ambulance Operation Coordination Committee is yet to devise the necessary guidelines.	X			X		MOHP	NRSC	Develop SOP for the rescue of road crash victims	Seats for trauma victims are recommended by the Chief District Officer. The chartered flights are generally arranged by crash victims' family members.
5.5	Capacity building on trauma-care service										
5.5.1	Provide trauma-care training or	WHO (South East Asia Regional	X			X	X	MOEST	Academia, Civil	Trauma care a part of	Trauma care is already a part of

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	relevant course to medical personnel in primary, secondary, and tertiary health facilities.	Office) has prepared a curriculum including trauma care for all medical students. It can be adopted and made a part of the standard medical curriculum.							Societies, NMC	certificate and bachelor level education in clinical medicine and nursing	the standard medical curriculum. However, the depth of course needs to be improved to include multiple organ failure.
5.5.2	Establish a Trauma registry	The present Health Management Information System (HMIS) does not record adequate details on trauma cases.	X			X	X	DOHS	MOHP, Pr	Trauma Registry to record details from identification of trauma cases to rehabilitation of victims established.	Only a few parameters are recorded in HMIS
5.6	Establish a network of trauma care facilities										
5.6.1	Ensure the primary function of the Level 1 Trauma Centre in Kathmandu remains care of trauma patients only.	The present practice of treating all type of patients may result in insufficient capacity in case of a real trauma event.	X			X	X	MOHP	Trauma hospital	Admission criteria to be developed and followed	Different medical and surgical cases are admitted in the hospital
5.6.2	Develop Provincial Hospitals to Level II and Municipal Hospitals to Level III trauma care centers.	Relevant plans have been proposed in the Approach Paper for the 15th Plan.	X	X		X	X	MoSD, MOFAGA, MOHP	Provincial/District Hospitals; Municipalities	Select hospitals such that a trauma care facility is available at 50km in the hills and 100km in the plains (or at 1.25 hour driving distance).	The former Zonal Hospitals upgraded to Provincial Hospitals have the corresponding capacity to treat trauma cases.
5.6.3	Identify hospitals for the establishment of trauma and rehabilitation units along major highways	National Health Sector Implementation plan 2021 has identified the need for trauma care centers. The 14th periodic plan has earmarked resources for 7 trauma centers	X	X		X	X	MOHP	Provincial/District hospitals	Select hospitals near major transportation routes to establish the trauma care facility	Location of hospital, in reference to the proximity of the road, isn't considered as a factor for its development
5.7	Train personnel from likely first responder agencies (e.g., Police, Fire Brigade, etc.) in injury emergency response.	Many trauma fatalities have been reported as crash victims do not receive appropriate emergency care within the golden hour. It could be addressed by training the likely first responders to administer first-aid.	X	X	X	X	X	MOHP	Traffic Police, Fire Brigade, FNCCI, Civil Societies	Amend National Health Policy-2076 to incorporate this provision.	National Health Training Centre (NHTC) is working on training.
5.8	Pass a law to protect Good Samaritans against prosecution for rendering aid to road crash	In the absence of legal protection, people hesitate to get involved in responding to road crashes.	X	X			X	MOHP	MOLJPA, Nepal Police	Draft and enact Good Samaritan Law	Despite MVTMA §145 making it compulsory to help road crash casualties, bystanders are found reluctant to

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
	victims.										help and accompany crash victims to hospitals in fear of legal hassles and detainment.
5.9	Encourage and sensitize public in becoming good samaritans	People might likely refrain from offering assistance to crash victims if they are unaware of their rights under the law and incentivized.	X	X	X	X	X	Nepal Police	MOHP/Civil Societies (NGO), Private Sectors	Provision of rewarding/acknowledging Good Samaritans for their actions	Occasional recognition
5.10	Improve the reception of the present toll-free telephone number to call Traffic Police and launch a mobile app to ask for help or to report road crashes.	Communication with Traffic Police needs to be improved for efficient reporting and requesting assistance.		X		X		Traffic Police	TMO, Civil Societies, Private Sector	A toll-free number is made receivable at District Traffic Police Office; The app offered by the Metropolitan Traffic Police Division is improved for use in all provinces.	The toll-free number of Traffic Police is receivable only at Provincial Traffic Police Offices; The data available on the Traffic Police app is specific to Kathmandu Valley only.
5.11	Amend MVTMA to facilitate better availability of first-aid to road crash victims.	In compliance with the UN conventions, first-aid kits should be always available. The availability of the kit could be checked during the vehicle registration renewal.	X			X		DOTM	MOLJPA, TMO	In elaboration to § 145, all motor vehicles need to carry first aid supplies; In elaboration to § 4, driving license applicants must participate in training on first aid.	Many car manufacturers offer basic first-aid kit at the time of purchase of the new vehicle, however, it is not adequate, and vehicle operators/owners seldom maintain a proper first-aid box.
5.12	Establish Road Safety Councils at federal, provincial, and municipal (metropolitan/ sub-metropolitan) levels through law.	A formal dedicated institution is required to coordinate the agencies working in road safety in all levels of government i.e., Federal, Provincial, and Local.									
5.12.1			X	X	X		X	MOPIT	MOLJPA, MOIALs, MOPIDs,	RSC at the federal level will be established with adequate budget, human resources, and other necessary logistics for day to day operations.	An ad-hoc road safety council has been formed through a Formation and Operation Guidelines by the Council of Ministers.
5.12.2			X	X		X		MOPIDs	MOLJPA, MOIALs, MOPIDs,	RSC will be established in all provinces with adequate budgets, human resources, and other necessary logistics for day to day operations.	No
5.12.3			X	X	X	X		Provincial RSC	MOLJPA, MOIALs, MOPIDs,	Road Safety Unit will be established in	No

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
										metropolitans/ sub-metropolitans	
5.13	Update National Road Safety Action Plan for covering the period 2021 to 2030	The earlier plan prepared in 2013 has already expired in 2020. Also, the structure of the state has changed after the promulgation of the new constitution in 2015. Thus, the existing plan needs to be updated considering the new target established by the United Nation for the period 2021 to 2030 and changed federal structure of the country.	X	X	X	X		MoPIT	Agencies representing NRSC at the federal level, MoPIDs at the provincial level and Municipalities at the local level	RSAP will be updated.	MoPIT had published the Nepal Road Safety Action Plan (NRSAP 2013-2020) in 2013.
5.14	Develop and periodically update plan to invest in road safety at Federal, Provincial, and Municipal levels.	An investment plan supporting the activities planned in the RSAP and a budget prioritization framework would help achieve the goal of reducing the number and severity of road crashes.									
5.14.1			X	X		X		NRSC	NPC, MOFRBN, MoPIDs	Establishment of a separate and dedicated unit on road safety within each agency working on road safety.	In the past, a system was established at TESU (DOR) in 1997.
5.14.2			X	X	X	X	X	Provincial RSC	NPC, MOF, MoPIDs, TMO	Allocation of an adequate budget by all the concerned agencies for road safety activities	Not established
5.14.3			X	X	X	X		NRSC	NPC, PPC, MOF, MoFALD, RBN, MoPIDs, MUAN	Establishment mechanisms for efficient and strategic resource allocation across safety programs	Not established
5.14.4			X	X	X	X		MOF	NPC, MoPIDs, MUAN	Sustainable funding mechanisms will be established by law for carrying out road safety activities.	Not established
5.14.5			X			X		MOF	Provincial RSC, MoPIDs, MUAN	Necessary policy/guidelines will be developed and implemented to ensure private funding on road safety through the PPP model.	Not established

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
5.14.6			X	X	X	X	X	MOF	NPC, MOF, MoFALD, MoUD, RBN, MoPIDs, MUAN, FNCCI	Identifying and implementing innovative funding mechanisms, such as central matching funds for road safety interventions at the provincial levels.	A Road Safety Fund would be set up once the Road Safety Bill is ratified.
5.15	Facilitate for the establishment of Centre of Excellence on road safety at Federal and Provincial levels for developing sustainable institutional base on road safety expertise in the country.	The main purpose of the center is to support Government agencies (Federal, Provincial, and Local Level) and other stakeholders for the benefit of reducing road trauma in the nation with: designing training materials, conducting case studies, preparing and publishing best practice book, conducting action research, developing different types of standard and guideline and linking with the international research community.									
5.15.1			X			X		NRSC/PRSC	National and Provincial RSC, Engineering Council, Medical Council, Universities	Number of Centers established at Federal and Provincial levels	Tribhuvan University has developed course curricula on road safety covering both at bachelor and master level of education in engineering
5.15.2			X	X	X	X	X	Centre of Excellence	RBN, DOR, DoLI, Private Sector, International Development Partners, NGO	Number of training/case studies/research activities conducted by those centers.	On average, facilitate at least five research per year on road safety topics as a part of university thesis at Tribhuvan, Paschimanchal and Purvanchal Universities
5.15.3			X			X	X	Centre of Excellence	RBN, DOR, DoLI, Private Sector, International Development Partners, NGO	Promote relevant research-based publications, e.g.,: (i) crash reduction factors in Nepalese roads; (ii) Cost of road crashes; (iii) vehicle-kilometer survey; (iv) Update design standards for SRN/ non-SRN roads based on the global safety	Some technical notes on road safety were developed and published by DOR/TESU in the nineties.

S.N.	Program									Monitoring	
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting	
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline
										practices	
5.16	Establish a system to investigate severe road crashes										
5.16.1		Usually road crashes are a result of a number of factors which the Traffic Police cannot comprehend.	X			X	X	NRSC	Traffic Police, DOR, DOTM, TMO, DAO, MOHP	Multi-casualty road crashes are investigated by a multi-disciplinary team of experts.	Often investigation of road crashes are done by a single police constable. Consequently, the true cause of the crash and consequent policy interventions to prevent similar crashes have been difficult to determine.
5.16.2		A modality for road crash investigation to be developed through piloting	X			X		NRSC	Traffic Police, DOR, DOTM, TMO, DAO, MOHP	A list of expertise for the investigation, SOP and scope of investigation, along with logistical support required by the investigators to be developed through piloting of possible alternatives.	A list of possible experts being drawn.

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ACRONYM

ADB	Asian Development Bank	MOPIT	Ministry of Physical Infrastructure and Transport
ARRB	Australian Road Research Board		
DOLI	Department of Local Infrastructure	MOPPTM	Earlier name of MOPIT (Ministry of Physical Planning & Transport Management)
DOR	Department of Roads	MOSD	(Provincial) Ministry of Social Development
DOTM	Department of Transport Management	MOUD	Ministry of Urban Development
DUDBC	Department of Urban Development and Building Construction	MUAN	Municipal Association of Nepal
ESCAP	(United Nations) Economic and Social Commission for Asia and the Pacific	NGO	Non-Governmental Organization
FRSMO	Federal Roads Supervision and Monitoring Office	NRCS	Nepal Red Cross Society
GON	Government of Nepal	RSAP	Road Safety Action Plan
GRSF	Global Road Safety Facility	PRA	Public Roads Act -1974
IOE	Institute of Engineering	RAIMS	Road Accident Information Management System
ITWAN	Independent Transport Workers' Association of Nepal	RBN	Roads Board Nepal
LCN	Local Core Network	RSA	Road Safety Audit
MOD	Ministry of Defense	RSC	Road Safety Council
MOEST	Ministry of Education, Science and Technology	RSMB	Bill on Road Safety Management
MOEAD	(Provincial) Ministry of Economic Affairs and Planning	RSSP	Road Safety Support Project
MOF	Ministry of Finance	SRN	Strategic Road Network
MOFAGA	Ministry of Federal Affairs and General Administration	TMO	(Provincial) Transport Management Office
MOHA	Ministry of Home Affairs	TOR	Terms of Reference
MOHP	Ministry of Health and Population	UNECE	United Nations Economic Commission for Europe
MOIAL	(Provincial) Ministry of Internal Affairs and Law	UNRSC	United Nations Road Safety Collaboration
MOLJPA	Ministry of Law, Justice and Parliamentary Affairs	VFTC	Vehicle Fitness Testing Centre
MOLMCPA	Ministry of Land Management, Cooperatives and Poverty Alleviation	VOC	Vehicle Operating Cost
MOPID	(Provincial) Ministry of Physical Infrastructure and Development	VTMA	Vehicle and Transport Management Act -1993
		VTMR	Vehicle and Transport Management Rules -1997
		WB	The World Bank
		WHO	World Health Organization

1. BACKGROUND

1.1. PROLOGUE

The existing National Road Safety Action Plan (National RSAP) was developed for the period 2013-2020, in response to the UN Global Plan for the Decade of Action for Road Safety (2011-2020). The National Road Safety Council (NRSC) established during the 1990s, had already become defunct when the action plan was being formulated. Thus, one of the key actions taken was to establish a new council as an independent body to effectively coordinate the road safety efforts of all the stakeholders. As an immediate measure, in 2013, GON had instituted a new council through a Formation and Operation Guidelines while a road safety bill was drafted in 2016 exclusively to address the road safety concerns in the country. Unfortunately, it was also the time when the constitution was being drafted, and laws were being amended to encompass the three-tiered structure of the government. Accordingly, the bill has undergone numerous reviews and is currently under review at MOPIT.

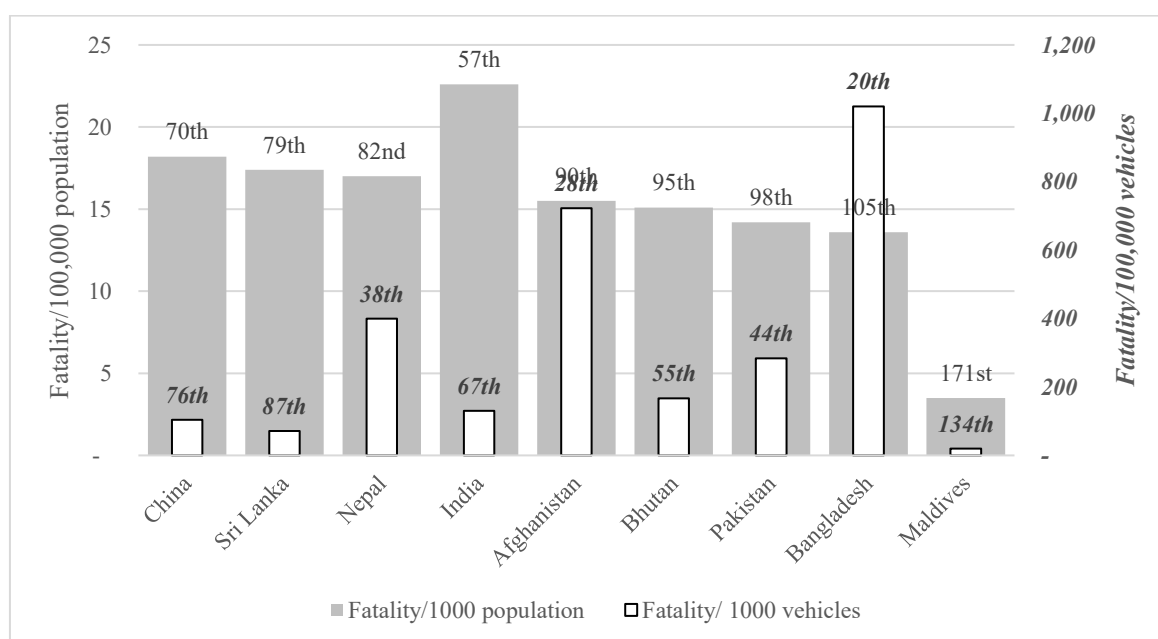


Figure 1: Road fatality ranking with reference to population and vehicle number.

As seen in Figure 1, WHO has ranked Nepal 38th (followed by Bangladesh and Afghanistan) with reference to fatality per 100,000 motor vehicles and 82nd (i.e., worse than Afghanistan, Bhutan, Pakistan, Bangladesh, and the Maldives) with reference to fatality per 100,000 population⁴. Over the decade, the frequency of road crashes has been continuously increasing. Thus, it is imperative to address the policy-implementation gaps through sustained and coordinated efforts of various stakeholders, to meet both national and international commitment to road safety.

Preparing a new version of the National RSAP to address the road safety challenges in the next decade through a collective effort of several stakeholders is one of the tasks being undertaken by the NRSC.

1.2. METHODOLOGY

The scope of the study has been widened beyond the TOR to draft the action plan in line with the recent Stockholm Declaration 2020 and comparable to similar works in other countries. The methodology followed is summarized in Figure 2. Accounting for the COVID-19 pandemic-related movement restrictions and physical distancing measures, the discussions have been limited to individual communication via telephone and emails than in groups.

⁴ Global Status Report on Road Safety, WHO, 2018



Figure 2: Process followed to develop National RSAP 2021/30.

2. DOCUMENT REVIEW

A review of relevant policy and legal documents was carried out to identify the gaps in policy and legal framework. Synopsis of the documents directly related to Nepal is provided in this section. Review of RSAP 2013-2020 is given in *ANNEX 2*.

2.1. REVIEW OF POLICY FRAMEWORK

The National Health Policy-2076⁵ has proposed community outreach and structural reorganization for calamities, including road crashes. The National Education Policy-2076, though not limited to road safety education (RSE), has the scope available to incorporate elements of RSE in the curriculum, extra-curricular activities at the high-school level, and research/fellowship placements at the university level⁶.

2.1.1. Road Safety Action Plans of Nepal

Evolution of National RSAP in Nepal

In order to provide a discussion agenda to the newly established Road Safety Council, DOR proposed the first Road Safety Action Plan in 2,000⁷. It was before the declaration of UN Decade of Action and thus was based on 3Es of Road Safety (Engineering, Enforcement, and Education). For the first time, it set a common platform to discuss road safety issues among stakeholders. An arbitrary target was set to reduce the number of road crashes by a third.

In 2005, in line with the GRSF movement, the action plan was revised to incorporate provisions for partnering with businesses. However, due to the decade long insurgency period, comprehensive data on road crashes: vital in assessing the efficacy of the measures taken, could not be collected. Thus, the initiative fizzled out.

With the declaration of the first UN Decade of Action in 2010, it became necessary to revise the action plan in line with the global plan. Thus, in 2013, numerous stakeholder consultative meetings were carried out, and the preceding action plan was prepared.

National RSAP 2013/20

National RSAP 2013/20⁸ is a very comprehensive document prepared in line with the UN Decade of Action for Road Safety 2011-2020. Based on the study of the country's road network, vehicle population, road safety status and issues, required efforts for coordination, and evaluation of implementation risks, the plan grouped the recommended actions/activities under the five pillars of road safety.

Following further refinements through a stakeholder workshop in February 2013, National RSAP 2013/20 was endorsed by MOPIT. The action plan renewed political commitment and helped place road safety on the national agenda. However, as the plan was drafted while Nepal was in a centralized system and did not incorporate local problems and opportunities, the expected improvements in the road safety status were not achieved.

A workshop organized by MOPIT in June 2019 to evaluate the implementation of the action plan reported visible progress made in different sectors and at different time periods against many of the

⁵ Article 6.12.7, National Health Policy-2076, MOHP, 2019

⁶ Article 10.15.4, National Education Policy-2076, MOEST, 2019

⁷ Nepal Road Safety Action Plan, TESU, DOR, 2000

⁸ Nepal Road Safety Action Plan (2013 – 2020), Ministry of Physical Planning & Transport Management, 2013

proposed targets. However, spatial and time-wise expansion of the progress throughout the country and all through the plan period wasn't perceptible.

A summary SWOT analysis of the National RSAP is given in *Figure 3*. A more comprehensive evaluation of the actions proposed is given in *ANNEX 1*.

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none"> Supported by the formation of NRSC Proposed actions based on situational analysis In-line with UN Decade of Action and all 5 defined pillars Acceptance formalized through a consultative workshop 	<ul style="list-style-type: none"> Considered full compliance of the prevalent legal framework. Progress monitoring mechanism not defined. Weak legal basis of NRSC formed through a standing order Mechanism to get resources relied on the draft bill. Consultation at the federal level only, little ownership at Provincial and Municipal levels
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none"> Bill on Road safety Act on the move Parliamentarians getting interested Popular agenda supported by media SDG has defined a minimum target Interest of the multilateral funding agencies 	<ul style="list-style-type: none"> Bill on Road safety Act not getting promulgated and ratified International development partners finding it easier to work with NGO than with GON agencies Capacity of GON agencies not adequate to forward the safety agenda

Figure 3: SWOT of National RSAP 2013/20.

Achievements within National RSAP 2013/20 period

Despite the limitations, significant progress was made against the actions proposed by National RSAP 2013/20. The achievements under each of the five pillars are as follows:

Pillar 1: Road Safety Management

- NRSC revived through a Formation and Operation Guidelines.
- Formulation and acceptance of National RSAP 2013/20.
- Training to Traffic Police Officers, DOR, and DOTM technical staff on roadsafety and traffic rules.
- Preliminary discussions within stakeholder agencies on the development of pedestrianization planning guidelines.
- Review of the insurance policy covering the vehicle, passengers, crew, and transport laborer.
- Identification of amendments required in VTMA 1993, VTMR 1994, LSGA 1999, and LSGR 1999.
- A number of consultative workshops organized on the amendment of laws, and promotion of road safety.
- Establish sound coordination mechanisms on managing road-safety through Nepal Road safety Council Formation and Operation Guidelines.
- Funding for road safety activities ensured from RBN.
- A new web-based crash reporting system (RAIMS) started on a pilot basis towards improving data collection and crash analysis.

- Numerous researches on road safety countermeasures carried out by engineering graduates as a part of their academic thesis.
- Piloting of traffic calming measures on Narayanghat-Mugling road with encouraging results.

Pillar 2: Safer Roads and Mobility

- Design stage and pre-opening stage road safety audit of roads under RSDP.
- Road Safety Audits now a part of Detailed Design TOR in highway improvement projects.
- Safety Audits at the post-opening stage for SRN road links.
- Treatment of crash blackspots along SRN.
- Thermoplastic road marking now a standard delineation measure.
- Footbridges constructed along Kalanki-Koteshwar section of the ring road.
- Department of Labor has published OHS guidelines.
- The newly ratified Civil Code makes public servants liable in case of negligence.
- Safety unit in DOLI at the central level established.
- ARRB trained and certified 25 Road safety Auditors in Nepal.
- The Approach Paper for 15th Periodic Plan has recognized traffic volume as the determining factor to warrant periodic maintenance.

Pillar 3: Safer Vehicles

- Development of departmental guidelines on: Vehicle condition and loading capacity; Minimum criteria for vehicle inspections tests; Closed driver cabins – public vehicles; Local body fabrication; School bus operation
- Identify amendments required in VTMA and VTMR to incorporate: Heavy Vehicle Management Policy; Phasing out old vehicles; Franchising vehicle inspection to private workshops; Prohibit freight on bus and minibus; Comprehensive vehicle insurance; Route permit procedures aligned with safety provisions.
- Upgrade DOTM institutional capacity through: International training for staff; Computerized database on Vehicle registration, Driving permits, and Road Crashes; ICT networking.
- Intensive spot-checking on vehicle loading.
- Weighbridges established by Truck Entrepreneur's Associations.
- Introduction of embossed vehicle registration plates.

Pillar 4: Safer Road Users

- Tests or driving licenses standardized.
- Road-safety awareness campaigns at school by Traffic police
- Production, dissemination, and telecasting of road safety material.
- Strict enforcement of seatbelt and helmet rules.
- Establishment of a road-safety technical unit in DOTM.
- Installation of tactile tiles on footpaths in Kathmandu.
- Installation of CCTV cameras at various junctions to monitor traffic.

Pillar 5: Post-crash Response

- Introduce a toll-free telephone number for Traffic Police.
- Develop a national ambulance policy.

2.1.2. Approach Paper for the 15th Plan

Road safety-related provisions in the Approach Paper for the upcoming 15th Periodic Plan period from year 2019/20 to 2023/24, has been summarized and discussed. Although road safety is not explicitly addressed in sectors such as the education sector, there exist provisions to incorporate appropriate measures through curricula for adult education, extra-curricular activities in schools or research work in the universities or in association with the private sector.

The plan is limited to the federal government. It is silent on the role of provincial and local governments in developing and extending road networks and tackling safety issues on them.

Approach Plan for the Roads Sector

Vision, Goal, and Objectives

The long-term vision proposes the development of dense, regionally balanced, accessible, safe, high quality, and sustainable road infrastructure. Achievement of financial prosperity through socio-economic development and trade facilitation resulting from the expansion of SRN has been taken as the goal for the plan period. The objectives highlight two aspects: minimization of VOC while extending and developing SRN in a balanced way, and facilitation of traffic through conservation, appropriate maintenance, and road safety.

For a reduction in VOC, the number and severity of road crashes need to be lowered as well. The inclusion of achieving SDG target 3.6 in the objectives would have made it easier for road administrators to include road safety as a component in any plans, design, construction, or maintenance of roads. As the issues encountered during planning, designing, constructing, operating, and maintaining local roads are similar in nature but not in magnitude, the Approach Paper must consider safety on local roads (under local infrastructure) as well.

Strategies and Policy Actions

Although it is insufficient to make provisions on road safety only for SRN roads and not for Urban Roads and LCN, the following policy provisions are relevant:

- a. Under the strategy to develop a modern road network, the use of ITS based traffic management system and planned construction of fast roads, tunnels and viaducts are proposed.

Besides facilitating traffic management and communication with the drivers, ITS could also be used for safety-related aspects such as RAISMS and speed monitoring and early mobilization against post-crash responses.

- b. Under the strategy for capacity building, amendment of existing laws and policy framework is proposed to be done with priority.

The indication is most likely on the amendment of PRA and formulation of rules under it. However, the promulgation of the Road Safety Act could also use this policy window.

- c. Under the strategy for mechanization and use of modern technology, road safety audit at design and construction stages for minimization of crashes on SRN is proposed.

This is a very encouraging provision, however in the absence of a legal mandate for RSA and earmarked budget to mitigate the findings, the audit alone cannot warrant safety.

- d. Under the strategy to minimize the negative effect of natural calamities and adverse weather

conditions, devising alternates to prevent road closures due to landslides and road crashes is proposed.

This opens up a small possibility to amend the Police Act to empower the Police to act more vigorously on road safety-related enforcement and community/school-based road safety campaigns.

Expected Achievement

Though the sectoral outcome supports the achievement of SDG Target 11.2 through the extension of SRN, road safety-related issues and their solutions have not been identified and addressed.

Approach Plan for the Transport Management sector

Vision, Goal, and Objectives

The development of a competitive, widely available, safe, and environment-friendly transport system has been conceived as the vision for the sector. The goal to be achieved within the forthcoming plan period is set as the development of a modern, widely available, reliable, environment-friendly system that is compatible with the available infrastructure. The objective is to create a competitive, widely available, reliable, safe, inclusive, and disciplined service for transportation of people and freight.

Strategies and Policy Actions

Road safety-related strategies, policy actions in the approach paper, and a short discussion on them are as follows:

- | | |
|--|---|
| <p>a. Promote good governance in the transportation sector through institutional strengthening and simplified operations</p> | <ul style="list-style-type: none"> ▪ Use of GPS for vehicle tracking.
This is a timely provision that promotes safe driving speed, adherence to allocated routes, prohibiting the use of unsafe roads or during unsafe weather, pinpointing road crash site for early rescue. ▪ Capacity building in the transportation sector.
DOTM staff are transferred from anywhere in the GON. It is the same case with Traffic Police, where officers are not required to have undergone thorough training on traffic management and road safety. The provision fails to develop a specific transport cadre or allowing tapping on resources for their training. |
| <p>b. Promote the use of environment-friendly and sustainable mode of transport</p> | <ul style="list-style-type: none"> ▪ Establishment of mechanized emission testing at vehicle testing centers in provinces.
This provision will be more effective if DOTM and the Ministry of Environment would provide technical backstopping and monitoring. ▪ Focusing on mass transport, establishment of the Bus Transport Authority will be prioritized.
This provision should promote mass transport and thereby automatically demote the use of motorcycles and cars, travel modes that are more susceptible to road crashes. ▪ Enhance the accessibility and availability of public transport to the physically and economically weaker section of the society.
Apart from comfort to the targeted section of society, this provision will enhance safety and ease traffic management. |
| <p>c. Harness and manage private</p> | <ul style="list-style-type: none"> ▪ Encourage the local government and the cooperatives to invest in the operation of the public transport system while limiting the role of the |

sector and cooperatives in public transport	<p>private sector in it.</p> <p>Considering the level of technical capacity, business acumen, willingness to get involved, and lack of a body to control their activities in undertaking the high-risk venture, the involvement of municipalities in managing the public transport system should be welcomed with caution. It could end up like the prevalent practice of non-engineered construction of local roads. In fact, a few municipalities have already started to buy buses without proper infrastructure and operation plans.</p> <p>Even if it's desirable to involve the municipalities in managing public transport, the provision should be moved under Section 9: Democracy and Governance in the Periodic Plan Document, so that the municipalities would notice it.</p> <ul style="list-style-type: none"> ▪ Encourage the private sector to establish and operate VFTC. <p>Considering the experience from other countries, VFTC could be built and operated by the private sector very efficiently if policies on long-term investments are made clear.</p> <ul style="list-style-type: none"> ▪ Scientific and automatized ascertainment of fee for using public transport. <p>This will encourage to enhance the quality of public transport buses and reduce overcrowding in them. Only cheap fare is not adequate to attract a modal switch in favor of buses, reach, operating hours, frequency, and comfort are equally important.</p>
d. Use of modern technologies in reducing road crashes	<ul style="list-style-type: none"> ▪ Road-condition based route allocation for the public transport system in the capital and other major cities. <p>Road-condition based allocation of bus routes should not have been limited to urban areas. Furthermore, plying of freight vehicles too needs to be regulated considering road geometry and surface condition.</p> <ul style="list-style-type: none"> ▪ Outcome focused rollout of RAIMS. <p>Counting the number of crashes or casualties alone serves little. Further clarification on the use of data generated from RAIMS in the improvement of roads would help.</p> <ul style="list-style-type: none"> ▪ Delineation of vehicle-free zones within dense settlements. <p>Declaration of vehicle-free zones should be accompanied by the development of parking and other ancillary facilities nearby.</p> <p>Although the transport management sector is the domain of DOTM, the department does not have control over the land-use plan required to allocate land for vehicle-free zones and parking. This provision should have been under Urban Development in the Periodic Plan as the issues are better undertaken by municipalities and DUDBC.</p>

Expected Achievement

Outputs such as facilitating the passengers through the use of modern technology, operation of VFTC in all the provinces, and use of GPS are highlighted. It would have sufficed to link these outputs in attaining the SDG target 3.6 (to reduce road crash casualties by 50%).

Approach Plan for the Health sector

Vision, Goal, and Objectives

The vision of the sector is healthy, productive, responsible, and happy citizens. The goal for the plan period is to develop and extend a strong health system at all levels to guarantee quality health service to the inhabitants. Out of the three listed objectives, only balanced development and extension of health services at federal, provincial, and local level is relevant to road safety.

Strategies and Policy Actions

- Under the strategy to develop human resources and to establish health facilities: the policy action calls for the establishment of the primary trauma center at the municipal level, hospitals at the provincial level, and referral hospitals under the federal government.

Trauma centers are specialized facilities where victims with multiple injuries or multiple organ failures could be treated. Even in developed countries, such facilities at the municipal level cannot be afforded. The Approach Plan might have considered a much simpler facility.

The policy is silent on training volunteers and paramedics capable of providing first-aid. This is more important than establishing hospitals. There is no plan to strengthen exemplary programs such as the Women Health Volunteers, which could support the community health system, including road crash trauma.

- Under the implementation of community-based healthcare systems: integrated development of ambulance service at all levels.

The policy is contrary to the Ambulance Service Operation Guidelines 2073⁹.

- Under multi-sectoral coordination to incorporate health components in all strategic plans: health components shall be introduced in strategic plans for education and health sectors.

Expected Achievement

The expected outcome relevant to road safety is the availability of a health facility within 30 minutes from 80% of the settlements.

2.1.3. The 14th Periodic Plan

Non-continuity of vision, goal, and objectives in the consecutive periodic plans has resulted in inconsistent policies. Course corrections though incorporate immediate requirements, are not triggered by the country's commitments to the global community (such as degree of achievement of MDG or SDG) and global trend (e.g., newer technologies, UN resolutions). There is not much coherence across sectors to address common issues like road safety.

There has been a significant allocation of budget on traffic management and road safety. However, as no basic data and policy direction was available, much of it remained unspent.

Plan for Roads Sector

Vision, Goal, and Objectives

The vision for the sector has been expressed as socio-economic integration, regional balance, and financial prosperity through the development of road transport. Socio-economic development, trade extension, and diversification and consolidation of international relations have been taken as the sectoral goal for the plan period. The stated objectives are the extension of commercial activities and efficiency enhancement of service delivery through effective, sustainable, dependable, safe, environment-friendly and less expensive transport service, as well as facilitation of internal and international trade.

Strategies

⁹ Section 2 (Chha), Ambulance Service Operation Guidelines, GON, 2073

- Enhance the availability of safe transport and transport facilities for inter-province linkages and economic development.
- Extension of the transport network in order to increase accessibility to services on agriculture, industry, trade, hydropower, tourism, education, and health.
- Development, extension, and improvement of roads linking international borders and road networks.

Though the strategies are relevant, the relevancy would have increased had the strategies tied to the global commitments on road safety to which Nepal is a signatory. With considerable international traffic (mainly vehicles from India) entering Nepal: with or without BBIN, a strategy to address it would have been timely.

Policy Actions

Not much of the vision, goal, objectives, and strategies has boiled down to road safety-relevant policy actions other than on the requirement of road safety audits during design, construction, and improvement of SRN roads. In retrospect, however:

- RSA should have been made a part of road development projects;
- budgets should have been required to be earmarked to correct the safety audit findings;
- a provision for safety audits of 17,000 all-weather roads under local governments should have been included.

Priority Programs

Although the periodic plan has listed implementation of Nepal Road Safety Action Plan 2013-20 as a major program, reference to it only in the sectoral program for roads has shrunk the ownership of this multi-sectoral policy document to DOR and MOPIT.

Another policy action with not much progress made in defining the role of the provinces, municipalities, and private sectors in the development and extension of road transport. A proposal drafted by MOPIT to the Cabinet of Ministers in this regard is yet to be ratified. As the responsibility, except for the SRN is not defined to date, maintaining the local roads and making them safer has not been a priority.

Expected Achievement

No parameter on road safety has been identified to measure achievement.

Plan for Transport Management Sector

Vision, Goal, and Objectives

Assurance of less expensive, reliable, and competitive transportation system was the vision taken for the 14th plan period. Providing accessible, safe, widely available, systematic, and environment-friendly transport services were the aimed goals. The objective was to improve the transport management system through well-managed, accessible, and safe goods and passenger transport.

Strategies

- Improve institutional capacity through the improvement of operational procedures;

In the later phase of the plan period, DOTM has issued several guidelines on standard operation procedures for its core responsibilities. The degree of implementation of these guidelines has

streamlined the procedures to some extent, but to reduce the waiting list of applicants, additional refinement of the procedures on the mobilization of resources is required.

- Improve service level, inclusiveness, and friendliness of public transport;

With the existing rules, the service level to be maintained by transport providers are very primitive in today's context. It has been difficult to enforce even the existing rules. The concept of inclusiveness is limited to statements in city buses on reserved seats for women, the elderly, and the disabled.

- Enhance the roles of the private sector and cooperatives in public transport with simultaneous improvement in monitoring mechanism;

Considering the rate of investment in the transport sector, the enthusiasm of the private sector and cooperatives is commendable. However, the monitoring mechanism is not up to the mark.

- Create environment-friendly vehicle fleets;

The providers to support environment-friendly vehicles are under a different sector. There is not much traction to this strategy due to the absence of inter-sectoral communication and failure in identifying a new business opportunity by these agencies.

Still, considering the increasing volume of petroleum products to be imported, the use of alternate energy needs to be seriously considered. For instance, most automobiles in Brazil run either on hydrous alcohol or gasohol (a mixture of 25% anhydrous ethanol with gasoline), similar policy could have been adopted in Nepal where a huge potential to extract ethanol from sugarcane husk (which would otherwise emit methane: a greenhouse gas) exists.

In the recent years, electric cars are increasing in the cities. Nevertheless, the technology still needs to be affordable for buses and trucks in addition to give adequate return on the investment made.

Policy Actions

- Establishment of VFTC in provinces;

None have been established in the provinces so far. The one VFTC established in Kathmandu hasn't operationalized to expected capacity yet since its construction in 2012, due to delays in procuring equipment, and repairment of existing ones. Considering the huge amount of capital required to establish VFTC and train an adequate workforce, its establishment and operation is better entrusted to the private sector. The role of government should be limited to provide land and set conditions for operation and certification.

- Rerouting of buses in Kathmandu Valley to get a mass-transit like effect;

Though a guideline has been issued for bus route allocation, there has not been much change to existing routes. Instead, buses are licensed to operate on new routes. To promote the use of buses, the public should be well informed on routes, the number of buses on the routes, and bus service frequency.

- Use of ITS to improve the effectiveness of traffic management in Kathmandu valley;

A network of centrally controlled vehicle-actuated signal systems was planned for the valley under ADB funding. However, due to the failed bidding process, the earmarked fund could not be spent. As Nepal is a small market for the international bidders to get interested, the system should have been assembled either locally or regionally.

- Capacity development and reorientation of the manpower engaged in transport management;

No substantial augmentation in the prevalent training regime. In the past, international agencies either provided training opportunities or provide grants for training participation. Now with training opportunities not being channeled through the government system, dearth of training

grants, and GON not willing to spend credits on capacity building, opportunities in thematic areas are fewer and far apart. Following the practices in the Department of Roads or Ministry of Foreign Affairs, the capacity creep could be tackled by developing specific cadre in respective departments.

- Improve the effectiveness of vehicle inspection in order to minimize road crashes and to improve the level of transport service;

Very infrequent and subjective testing in the absence of VFTRC is evident from the increased number of road crashes due to vehicles not in driving condition. Furthermore, the VTMR needs to be amended to align the parameters to be tested with the corresponding UN resolution. The penalty against elapsed test deadlines and failure to rectify the defects on time should be severe: just like that practiced by TÜV in Germany.

- Cooperation among the public, private and cooperative sectors to promote public transport system;

Not much progress except for occasional grants by the Federal Government and Kathmandu Municipality to Sajha Cooperativeto add buses or extend the operation hours. Such grants are neither enough nor sustainable. The role of the government should be limited to settingservice standards, coverage, operating hours, and frequency of the service. The fare structure could be allowed to fluctuate in relation to the hours of the day (beyond dusk and dawn) and facilities (in addition to the specified basic requirement) offered.

- Working together with transport service providers for better compliance with vehicle specifications and monitoring for the degree of compliance;

In the absence of VFTRC, there is no objective monitoring. Most of the passenger vehicles are not as specified by VTMR.

That being said, there is a great scope of public-private cooperation in the case of the establishment of VFTRC and weighing stations. In fact, different trucking associations are already operating several weighbridges. DOTM could facilitate to establish similar facilities throughout the country under a condition to be supplied with the data generated.

- Reassessment of allowable duration to operate, emission and capacity of vehicles and strict enforcement of legal provisions;

The corresponding laws have not been amended in view of duration to operate, emission, and capacity of vehicles. The standing orders issued by the Traffic Police from time to time have no legal and technical standing. For example, duration to operate depends upon fare structure proportionate to passenger volume, emission parameters are dependent on fuel quality, while allowable vehicle capacity depends on the road characteristics.

Priority Programs

- Improved driving license through an online application process and availing the license and vehicle ownership certificate on the smart card;

A long waiting list to get the services has promoted grey businesses of providing counterfeit documents and admitting drivers into the road system without testing the driving abilities. To prevent this, in addition to better printers and trained staff at DOTM, the capacity of privately owned training centers needs to be enhanced.

Moreover, the whole process to train and test drivers, test vehicles, and award the operating license or ownership certificate could be outsourced as in developed countries. In this PPP model, the government is required to specify the test conditions, monitor the test process, specify the database, and format of certification. Instead of spending state funds to provide services, the government could even raise revenue from such permits.

- Legal framework for monitoring of the whole of the transport sector;

No laws are perfect and require amendments from time to time to address the present situation. Nevertheless, it is a lengthy process undergoing reviews and revisions at many stages. Sometimes by the time of ratification, even the purpose of the amendment is diluted. Thus, more emphasis on enforcement of existing legal provisions: without suspending any (for example, mandatory helmets for pillion riders, or compulsory insurance for all motor vehicles, etc.) would be the pragmatic approach.

- Conversion of painted vehicle license plates to embossed one;

The conversion has stopped due to a court order. Before the process resumes, shortcomings need to be corrected for better identification. For example: (i) instead of all plates in white, use of plates in a different color based on use (as in the past); (ii) instead of now defunct zones, showing of province code; (iii) codes for district; (iv) code for Municipality; (v) year of first registration; (vi) serial number; (vii) logo of the flag. In addition, RFID chips could be planted on the plate to get more information (for example, on ownership history) through a chip reader. In this regard, among the neighboring countries, the plates both in China and India are good.

- Establishment of VFTC;

In the last plan period, all the attempts to restart the existing VFTC was not successful. The establishment of a new one was found to be too capital intensive. The 15th Plan rightly calls for private investment.

- Erection of traffic signs at strategic locations;

As the location requires careful study which needs to be repeated throughout the life of roads, this should be the responsibility of road administrators (DOR, DOLI, Municipalities) and not transport management agencies (DOTM, Traffic Police). DOTM has been providing a few signs to the traffic police for installation.

- Awareness creation on traffic safety;

The Traffic Police have been doing this, but it lacks the resources required. Besides, the establishments under MOEST being more familiar to the student psyche should share a part of the responsibility in developing the curriculum, introducing it through adult education and researches at the university level. For this, the policy action needs to be stated under the Education Sector.

- Management of old vehicles;

The practice to reuse old long-distance buses as city buses or for short mountainous routes without any modification under the policy, needs to be stopped as the characteristics of the two differ widely. Similarly, moving old polluting vehicles from the capital to the cities in the south should stop as well. For a country that does not manufacture motor vehicles, the decision to scrap should be based on the objective evaluation of fitness and new use.

Expected Achievement

Though ITS system for traffic management could not take place, intersections were improved. Intensive exploration to rejuvenate the Teku VFTC was made. Two weighing bridges are being installed. A mass printer has been procured to cut the long waiting list for new driving permits. Preparation to issue embossed license plates is complete and is waiting for the court stay-order to lift. Traffic signs are being erected.

Moreover, there has been progress in establishing a RAIMS on a pilot basis.

Although the so-called syndicate system (vehicle fleets being operated by conglomerates of operators) has been officially abolished, it is still active as no better system could be established for the mutual benefit of the transport service providers and the service consumers.

2.1.4. National Transport Policy 2001

The objective of the policy focuses on developing a reliable, cost-effective, safe, facilitating, and sustainable transport system. Nevertheless, no strategies have been identified to enhance safety. The following three policy actions are relevant to road safety:

§5: ... maintenance and repair of the existing transport infrastructure to ensure that appropriate service levels are sustained.

Road maintenance is the main focus of the action plan. Well maintained roads are always better for road safety.

- §8. The construction, improvement, and management of the means of transport shall be done in harmony with the traffic-safety and environment.

There have been many pertinent actions for a safety centric built and condition of motor vehicles. While allocating routes for buses and permits for trucks, the condition of roads they would be plying on has to be considered.

- §12: ... improving the comfort, reliability, safety, frequency, availability, and affordability of public transport and reduce harmful emissions arising from public transport operations.

All the listed characteristics are important for a good public transport system.

Nevertheless, as the policy document is already a couple of decades old, many policies including those on road safety, need updating.

2.1.5. Ambulance Service Operational Guideline 2017

The guidelines list the equipment and professionals which class A and B ambulance should have and also the code of conduct for the ambulance driver. The operational protocol to be followed by the medical staff in the ambulance and the health facility receiving the patient, which is very important for road crash casualties remain undefined. Also lacking are the protocol to seek ambulance service and the communication channels available free of cost.

District Ambulance Service Operation Committee under the aegis of a National Ambulance Operation Coordination Committee has been assigned for registration and monitoring of the ambulance services.

The guidelines seem to have been issued to regulate commercial ambulance services and those operated by private hospitals. Yet in Nepal, the majority of the ambulances are operated either by municipalities or by users' committees. These will now come under the jurisdiction of district administration but without any provision for operational support.

The need for air ambulance is identified but falls short of providing any guidelines on it.

2.2. REVIEW OF LEGAL FRAMEWORK

The Constitution of Nepal under § 31, guarantees equal access to health services. Under Policies relating to the basic needs of the citizens under § 51 Policies of the State, it directs for a safe, systematic, and disabled-inclusive transportation sector. Though the newly ratified documents mirror the spirit, many older legal documents need amendment.

On the other hand, there are plenty of cases of ignorance or reluctance to apply the most appropriate legal provision. For example, the Civil Code has provisions against inadequately secured work-site, and the VTMA requires owners of vehicles to get insurance coverage for casualties (for drivers, passengers, and the third party), the provisions are not enforced. Subsequently, if a vehicle veers into an unsecured ditch, the driver is penalized for driving recklessly and not the road-works contractor. Similarly, the local people need to team up to rescue the passengers from the crashed vehicle, instead of compelling the vehicle owner (who failed to purchase the insurance coverage) to

manage the consequence.

2.2.1. RSC Formation and Operation Guidelines 2016

The formation order for Road Safety Council is based on the Good Governance Act 2006 and not on VTMA. Hence, as observed in its objectives, the focus is on governance than the prevention of road crashes.

Objectives

As stated in the guidelines, its objectives are:

- a. study, research, and surveys on road safety;
- b. liaise with and to work together with international agencies on the study, research, and surveys on road safety;
- c. formulation, implementation, and monitoring of Road Safety Action Plan;
- d. coordinate with governmental and non-governmental agencies to share information and experiences;
- e. provide financial and other support to road safety-related programs;
- f. counsel GON and affiliated agencies on matters related to road safety;
- g. prepare and apply specifications for road safety-related works;
- h. review specifications for public, private and other vehicles;
- i. investigate and conduct research on road crashes;
- j. identify road crash black spots, conduct research on, and prevent these.

To fulfill these objectives, a dedicated team of staff and budget is required. It is not easy to mobilize resources in the setup of a ministry that has monitoring functions than an executive one. The location of the council inside the federal secretariat premises, where public access is restricted, is another problem.

All the member agencies have their own Yearly Plan of Operation (YPO) to execute. Thus, they could try to address any resolution made by the council at the earliest in their next year's YPO. For many agencies, road safety is not their focus area or area of their core expertise. Thus, earmarking budget for a fringe area like safety by curtailing some of their core activities is rather difficult.

Composition of the RSC

The 15-member council is composed of the following:

- | | |
|----------------------------------|--|
| a. Chair: Secretary, MOPIT | i. Member: Representative, MOD |
| b. Member: DG, DOTM | j. Member: Chief, Traffic Directorate, Nepal Police |
| c. Member: DG, DOR | k. Member: Experts on traffic management or road safety x3, nominated by RSC |
| d. Member: DG, DOLI | l. Member: Representatives from among transport entrepreneurs x2, nominated by RSC |
| e. Member: Representative, MOHP | |
| f. Member: Representative, MOEST | |
| g. Member: Representative, MOHA | |
| h. Member: Representative, MOF | |

MOPIT is mandated as the RSC Secretariat.

Although the membership is small enough to get the required quorum for the mandated 4 meetings per year and for meaningful discussion, limiting the council members to officials from the federal level of government is a setback. As empowered by the constitution, the stakeholders at the provincial

and municipal level are not bound to follow any resolutions made by the council. Furthermore, the council members have access to information available at the federal level only, although the measures required vary for different locations, even those within the jurisdiction of the same level of government.

Thus, ideally, it would be better to have a safety council at the provincial level and safety cell at the municipal level. If this would not be possible, at least there should be a way for the provinces and municipalities to be heard at NRSC.

2.2.2. Draft Road Safety Bill 2019

A first draft of the bill came out in 2017. It has undergone several revisions and is moving between the proponent MOPIT and MOLJA before being presented to the legislature for ratification. As the bill may still undergo further revisions before being ratified, the salient features of the bill and possible points to be considered during revisions are discussed here.

Formation of NRSC

To coordinate among the road safety-related agencies, monitoring of road safety-related provisions and practices, advise GON on formulation and implementation of road safety-related programs, the bill proposes a 33 member, excluding invitee, National Road Safety Council as follows:

- | | |
|---|---|
| a. Chair: Minister, MOPIT | l. Member: Chief, Highway Security and Traffic Directorate, Nepal Police |
| b. Member: Minister x7, Provincial MOPID | m. Member: Chair Insurance Board |
| c. Member: Secretary, MOPIT | n. Member: ED, RBN |
| d. Member: Secretary x7, Provincial MOPID | o. Member: Experts on traffic management or road safety x3 (including 1 female), nominated by GON |
| e. Member: Secretary, MOHP | p. Member: GON nominated representative from Local Government x2 |
| f. Member: Secretary, MOHA | q. Member: GON nominated representative from among transport entrepreneurs |
| g. Member: Secretary, MOEST | r. Member Secretary: ED, NRSC |
| h. Member: DG, DOR | |
| i. Member: DG, DOTM | |
| j. Member: Jn. Sec. MOF | |
| k. Member: Jn. Sec. MOHA | |

The membership is too high level to convene regularly and too large for any meaningful discussion. In India, a body constituted similarly¹⁰ has so far been unable to convene a single meeting. Hence it would be more logical to have a high-level body and a smaller executing body at both the federal and provincial levels (Figure 4). Although the municipalities of metropolitan and sub-metropolitan categories could require a two-tiered structure, due to lack of staff, for the time being, they could start with a single-tier body.

Federal Level	<ul style="list-style-type: none"> • National Road safety Council (NRSC) • Executive Committee of NRSC
Provincial Level	<ul style="list-style-type: none"> • Provincial Road Safety Council (PRSC) • Executive Committee of PRSC
Municipal Level	<ul style="list-style-type: none"> • Municipal Road Safety Cell

Figure 4: Levels of governance and corresponding road safety bodies.

¹⁰ The Gazette of India, Nr 225, 13 August 2015

Functions, duties, and powers of the Council

The draft bill has identified the following scope of activities for the council:

- a. Defining and updating national road safety goals, targets, objectives, policies, and strategies;
- b. For effective enforcement of road safety-related provisions in the existing laws, collaborate and direct relevant agencies, recommend for required legal amendments to Federal, Provincial, and Local Governments;
- c. Coordinate efforts of government and non-government agencies in implementing road safety-related activities;
- d. In order to manage road safety-related information, establish and manage a central RAIMS as well as facilitate related surveys, studies, and researches;
- e. Liaise with agencies working on road safety in other countries and collaborate for mutual benefit;
- f. Publish information material on road safety and arrange for their broadcasting;
- g. Coordinate, monitor and evaluate road safety project implementation by relevant agencies;
- h. Capacity building of road safety-related agencies;
- i. Manage Road Safety Fund, prepare and approve annual budget and programs for NRSC Secretariat, avail budget, monitor and draft necessary policies;
- j. Constitute study and investigation teams on road safety and other related issues;
- k. Constitute an Executive Committee for effective implementation of policies and programs on road safety;
- l. Implement other assigned tasks.

The above scope of work further highlights the need for a road safety body at all levels of government with the NRSC taking the lead.

To help the NRSC to decide on where to act and what to do, the council needs to include the following in its scope of work. Alternatively, the council could demand these be commissioned by its member agencies.

- i. Periodic road safety assessment at the network level: this allows to identify of road network against its functional hierarchy
- ii. Vehicle-kilometer survey reflecting the scale of safety risks the road users are encountering at roads under different agencies, at different geographical locations, and for different vehicle types.
- iii. Cost of road crashes: this gives a monetary value to the loss associated with road crashes so that a cost-benefit analysis could be done to decide on reduction measures to be selected and to get an indicator for international and provincial comparison.

In Section 4, 5, 6, 7 and 8, the bill further elaborates the scope on: (i) safe road infrastructure; (ii) safe vehicles and transport services; (iii) guiding and educating road users; (iv) post-crash rescue and treatment of crash victims; and (v) insurance and compensation.

Considering the deficiencies in VTMA and the Police Act on effective enforcement of traffic rules, it would be appropriate to clarify enforcement responsibility to Traffic Police through this bill. Nevertheless, the scope of works is sufficient for the time being but needs to be reviewed and updated periodically.

2.2.3. Police Act-1955, Police Rules-2014

Police Act -1955

Police responsibility, as per the act, focusses predominately on maintaining law and order.

On traffic management, under §18: arrangements of motor vehicles or passengers on public thoroughfares, etc., police personnel and officers have been tasked to regulate and control traffic, prevent obstructions to traffic and maintain peace on public roads and adjoining area. The act does not confer any punitive authority to the Police. Thus, the provisions under VTMA, the Civil Code, and other acts are invoked to impose penalties.

No responsibility has been assigned to the police concerning road safety.

Police Rule-2014

There are no rules specifically addressing road safety. The following two provisions can influence road safety to some extent:

- a. The Chief of police offices at each level (from AIG to Inspector), have a general responsibility to formulate policies and implement them in order to opportune Traffic Police for traffic management and control.

This task definition is too loose to be effective and is often subjected to personal interpretation. It is one of the main reasons for non-continuation of any commendable police action: be it mandatory use of helmets for motorcycle pillion riders, no-pressure horn, dipping of headlight in the night, freeing footpaths from hawkers, one-way arrangements in city roads, recuperation station for the drivers on highways, or use of body camera to record defiance to traffic rules.

- b. Another provision is the basic and advanced training in traffic management and control. The road safety aspects fall under the part of training on traffic management, which is not adequate.

It is evident that the Police have been shouldering more responsibility than expected. Road safety education and managing the accident database are the prominent ones.

2.2.4. Roads Board Act-2002, Roads Board Rules-2004

Roads Board Act -2002

Under § 25 use of Road Fund, RBN may finance road safety activities. However, as the law does not define the size, focus, location, and resources required for a candidate road safety activity, the provision is too discretionary.

Roads Board Rules -2004

Under § 2, the eligibility for any road safety activity to get support is made conditional by specifying that the activity should have been included in the yearly plan on road safety. A multi-year project on road safety can secure funds through § 7.

§ 8 defines the hierarchy of activities for which RBN provides resources. Out of the 6 priority areas, road safety ranks 5.

Nevertheless, if the executing agency can prepare a realistic proposal, including a multi-year cashflow plan, getting support from RBN is possible. In the next amendment of the rules, it would be better to define a prioritizing method on the selection of road safety activity and corresponding funding criteria and limits.

2.2.5. Local Government Operation Act -2017

As per § 11.Ta.4, the Rural Municipalities and Urban Municipalities are responsible for road safety management on the roads under their jurisdiction (i.e. non-strategic roads). However, the act does not elaborate further on goal and priority activities towards making the roads safer.

2.2.6. Public Roads Act -1974

Seldom exercised provisions

- a. § 3Ka: to impose a 6m setback from road edge for permanent structure;

This powerful clause to avoid possible vehicle-pedestrian conflicts has never been exercised. It may not be very difficult to exercise it in the prevailing scenarios with settlements already sprung up even along SRN roads.

- b. § 21: to recover clearing expenses from the person creating obstruction on road;

This provision prohibits using the road as temporary storing space of construction material, fresh harvests, and obsolete vehicles obstructing the road and thereby, creating a crash hazard. The provision is hardly used even when such use is rampant.

Sparingly exercised provisions

- a. § 16Ka: to impose a gross weight cap for road sections;

This provision is important for the safe passage of vehicles over old bridges. Although signs are usually erected on approaches of dilapidated bridges, the monitoring and maintenance part is often missing.

- b. § 19: to prohibit any not permitted activity on the road (or within ROW);

The monitoring of unauthorized activity has not been getting due attention. For example, the opening of access to the highways at short intervals has become a major problem. Many accesses are connected at wrong locations, creating safety hazards and drainage problems.

There have been several cases of accidents due to unsecured road works in recent years. There is another side to this problem: cutting pavement is allowed only after paying the reconstruction cost. Still, the repair is not prompt because the contracting process for road repairs starts only when the maintenance volume exceeds a certain threshold. In the meantime, the potholes become more threatening. This needs to be corrected. The work-zone safety should be a paid item with specifications and monitoring defined. Besides, anticipatory contracts need to be active throughout the year for road repairs.

Provisions exercised by other agencies

- a. § 18: Power to remove goods obstructing movement on public roads;

This provision, though hardly used by road agencies, is used sparingly by the Police. Provincial and Municipal Police could enforce this better if the maintenance responsibility of SRN sections within urban areas is relinquished to the municipalities.

2.2.7. Vehicle and Transport Management Act -1993, Vehicle and Transport Management Regulations -1997

VTMA and VTMR provisions within DOTM jurisdiction

- a. Chapter 8 (VTMR Chapter 7): provisions for compulsory insurance (but the amount to be insured amount is undefined);

From the very beginning, this provision has been suspended for commercial vehicles (buses, trucks, taxis, 3-wheelers) even though these vehicles log more kilometers and carry many more passengers and freight than private cars. As the provision is relevant to the post-crash aspect of road safety, GON first needs to set a minimum threshold for sum assured to each probable road crash victims. Then, if insurance companies refuse to insure any vehicle that has been certified as roadworthy, the companies should be penalized. If the vehicle owners do not insure (for drivers,

passengers, and third party), they should be forced to pay the crash victims (including, road administrators against damaged infrastructure) the minimum coverage sum.

With the financial consequences of road crashes taken care of through compulsory insurance, the need for the vehicle owners to form a cartel (referred to as Syndicate in Nepal) will diminish.

- b. Chapter 4: only license bearers are allowed to drive motor vehicles;

The provision is very seriously exercised. The on-road checking against non-possession of a driving permit is vigorous. The tests for driving license has already been standardized but needs to be updated. To assure transparency and for nationwide uniformity of the tests, DOTM has issued Guidelines to operate CCTV Camera at Test Venues 2068 and Curriculum for Driving Test 2069.

- c. Chapter 5 (VTMR Chapter 5): only license bearers are allowed to serve as conductor (helper) in public vehicles;

The provision, though important for traffic management and road safety, has never been enforced. Besides, in violation of the Civil Code, the employment of underage helpers still has not been fully abolished.

- d. Chapter 6 (VTMR Chapter 6): commercial passenger vehicles to obtain route-permit;

As per recent practice, the intra-provincial routes are assigned by TMO while the inter-provincial routes are issued by DOTM. In absence of a map attached to the permit, vehicles often cover additional territory but maintain the obligatory points. This is not a major problem for traffic safety unless the additional road covered is unsafe to drive.

DOTM has issued Route Permission Guidelines to standardize the procedure. The present scarcity for monitoring staff to check on compliance cannot be overcome unless all the routes are digitized and availed on a public platform.

- e. § 140, 157, 158: appointment and authority of Mobile Transport Inspectors;

This provision has never been implemented. As Traffic Police Officers are not allowed to impose penalties higher than NPR 200, for many offenses, the Police Officers need to escalate the cases to DOTM or the corresponding TMO, causing delay and annoyance.

- f. § 17, 144: only road-worthy motor vehicles allowed to ply;

Before vehicles are allowed to be driven, they need to be checked against a set of criteria (mechanical health, dimensions, emission, allowable life span, etc.) each year as per the law. This is very important for safety against crashes due to mechanical failures. However, buses with dilapidated or narrow seats, trucks requiring long braking time reveal that the provision is not strictly followed. Testing, Monitoring, and Pollution-Test Guidelines for Small and Medium Vehicles 2074 have been issued in this regard. However, a guideline itself is insufficient if there are no suitable testing facilities or adequate qualified test-personnel.

So far, a VFTC had been established in Kathmandu to be operated by DOTM staff. Nevertheless, since its establishment, the facility has not been operated: first due to lack of trained staff and later because the equipment has become obsolete. The 15th Periodic Plan aims to establish a VFTC at each of the provinces to be operated in the same model. This is not practical at all because of the huge investment required in establishing and operating such facilities. For example, there are about 13,000 buses, 14,000 trucks, and 23,000 mini-buses registered in Bagmati Province. This implies about 20 vehicles need to be checked in an hour. This is practically impossible with one set of equipment. Experience in India deduce the following capacity (number of vehicles tested per lane per year) figures for VFTC¹¹:

- 2-Wheeler/ 3-wheeler: 21,000 (about 10 per hour)

¹¹ Society of Indian Automobile Manufacturers 2003, Road map for inspection and maintenance system for in-use vehicles.

- Less than 3 MT vehicle: 16,000 (about 8 per hour)
- Between 3 MT to 10 MT vehicle: 10,500 (about 5 per hour)
- More than 10 MT vehicle: 8,000 (about 4 per hour)

The better option is the PPP model, as practiced elsewhere with the government providing test standards, land, and licenses. The private sector is invited to establish VFTC with the condition on the maximum number of queuing days, minimum facilities to be availed, and a cap on fees collected. The role of the government is then limited only to monitoring and collecting a portion of the revenue, similar to the operation of driving skills testing centers.

- g. § 39 (VTMR § 12): Prohibition on alteration without obtaining approval;

The provision prohibits making any alteration (color, number of seats, structure, engine, chassis, etc.) in a motor vehicle without approval from a competent authority.

- h. 159 (VTMR Chapter 8): license to be obtained to operate training center, factory, and workshop;

Previously, DOTM itself used to establish and operate driving skills testing centers. Now the licensed training centers have doubled, while the testing venues are under DOTM's monitoring. This is a good PPP approach and standardized through Operation of Driving Test Centre 2074 guidelines. Now the next step is to encourage the private sector to establish such facilities throughout the country and in adequate numbers so that getting a license within three months becomes possible.

The vehicle body building workshops and authorized service centers also function in the same way. Now the department needs to put effort into bringing all the road-side repair shops under the legal umbrella so that there is uniformity in the level of service and fee thereof.

VTMA and VTMR provisions within TMO jurisdiction

- a. § 12: prohibition on using motor vehicles for non-registered purposes;

This provision prohibits passengers from trucks and goods on the roof-top of buses. Many crashes due to overloading are happening because the clause is not invoked. DOTM has issued Transport Management Guidelines 2060, and School Bus Operation Guidelines 2074 in this regard. However, additional enforcement effort is required to ensure compliance with the legal provision along low-traffic roads.

- i. Chapter 6, § 128: commercial passenger vehicles to obtain and follow route-permit;

In the case of intra-provincial routes, the permit is given by TMO. As many of the routes use non-SRN roads with bad geometry, allocating the route only to the suitable type of vehicles (depending on size, tractive power, minimum turning radius required, etc.) is important from safety consideration. For guidance, DOTM has issued a Route Assigning Guidelines 2074 in 2018.

- j. § 154: composition of Transport Management Committee;

To facilitate transport management at operation level, provision for a committee with sweeping authority under convenorship of CDO and with Chief of District Police Office, a representative of transport entrepreneurs, a representative of transport labors and Chief of TMO has been made. However, except to award new route permits, visible impacts of the working of the committee has been hardly evident. New confusions on the representation of Provincial Authorities in TMO in the aftermath of the new constitution needs to be abated. Considering far-reaching decisions the committee could make, it needs to be strengthened through specialized staff and other resources.

With the multi-agency representation from the private and the public sector, through amendment of VTMR, the committee should be entrusted with the additional responsibility for promoting and coordinating road safety initiatives.

k. § 156: Driving License Examination Committee;

To standardize the licensing procedure, and to make it transparent and fair, a committee with the CDO as the chair has been designated in the act. This created a rush of driving license applicants to certain districts in the past. While the support of the district administration office might still be required to maintain the integrity and transparency of the exams, the licensing procedure should be as specified by DOTM at the center.

VTMA and VTMR provisions enforced by Traffic Police

The following provisions are supposed to be monitored by Traffic Inspectors from DOTM. However, as even after 27 years of the enactment of VTMA, no such staff have been recruited, and the enforcement of these provisions has been entrusted to Traffic Police.

It is clear that additional infrastructure is required in many of the following cases to facilitate enforcement. The road administrator agencies (DOR, DOLI, Municipalities) need to come up with engineering solutions to facilitate police work.

l. VTMA Chapter 4 (VTMR § 4): only license bearers are allowed to drive

The on-road checking for the possession of a driving license is very frequent in the populated areas.

On the other hand, driving permit applicants sometimes need to wait for a year even to register their application. As mobility is a must in today's world, the time-taking application process is creating the possibility of driving without a permit.

a. § 101: safe and timely transport of passengers and goods;

The Traffic Police has been using the time-card to discourage over-speeding, however, there is no mechanism to ensure a uniform cruising speed throughout the journey. Furthermore, as the safe speed could be different for different road sections, and the driver needs to take a rest in long journeys, section-wise monitoring of driving speed is necessary. This cannot be done without an ET-based system with a real-time speed monitoring facility.

b. § 102, 117 (VTMR § 15): prohibition against overloading vehicles;

The following are the maximum allowable loading: bus: 56 to 26 people, Minibus: 25 to 15 people, Jeep/ van/ pickup/ microbus: up to 14 people, car up to 5 people, 3-wheelers without meter (example: electric) up to 13 people, motorcycles/ scooter: up to 2 people, truck: 10.2 MT on the rear axle and up to 8 people, mini-truck: 5 MT payload and up to 7 people, pick-up: 1 MT payload and up to 5 people, and power-tiller: mini-truck: 1 MT payload and 1 seat.

Even within a category, there are various make and model with a diverse carrying capacity, with only a few vehicles suitable for the terrain in Nepal. Thus, the above specifications need to be revisited to enhance safety.

In the case of trucks, the monitoring against overloading is mostly limited to visual inspection as the police lack weighing cells. In some cases, at border crossing points, when the overloading is clearly evident, the provision is suspended. As in other countries, it is possible to have different sets of weighing limits. However, this needs to be provisioned in the act and the corresponding road sections need to be built safe for the specified loading regime.

VTMR § 18 further specifies the characteristics of passenger vehicles, with higher specifications for night travels and long-distance travel. Using the legal loophole of re-registration, upon expiry of the permit for night-travel and long-distance travel, the buses start to operate in the cities and to the destinations in the mountains. This is a very unsafe practice and needs to be stopped because these buses with long overhangs, small windows, stuffy seats, narrow gangways, very bright lamps, and with a single door are neither suitable for mountainous roads nor the narrow and winding city roads where the passengers need to get on and off frequently.

- c. § 103, 104: rest for the bus driver and change of drivers;

Though the drivers themselves stop for tea/meal breaks occasionally, the specified 1-hour rest after every 4-hours of driving and changing of drivers in 6-hour frequency is not enforced. In festive seasons when the demand for buses goes high, driving continuously for 12 or more hours without any rest is common. At a few police posts, the officers have attempted to provide resting areas for drivers of long-distance buses. Nevertheless, without a similar facility for the passengers and a network-wide provision for resting places, such isolated attempts weren't sustainable.

For safety and sustainability, resting places needs to be developed throughout the SRN. Except for the land and some basic infrastructure to be provided by the government, the private sector could be invited to build the facilities further and operate them under a PPP approach.

- d. § 111, 124: drivers are not to be disturbed;

Even momentary distraction of drivers may lead to fatal consequences. This should not only be limited to discourage drivers from using cellphones or chatting with them. Even allowing passengers to sit very close to the drivers and requiring drivers to collect fare or change money are big distractors.

- e. § 116: weight of vehicles;

The gross weight is covered by PRA. Whereas, VTMR § 15 covers allowable axle loads.

- f. § 118: declaration of vehicle-free zones;

This could be a very powerful provision for pedestrian safety. Nevertheless, in the absence of land-use regulations and lack of parking facilities nearby, past attempts had to be abandoned.

If the declaration of vehicle-free zones is a priority for the municipalities in reducing road crashes, improving air quality, promoting tourism, and facilitating local commerce, they come up with complementing facilities nearby as well. In fact, with a proper cost-sharing model, the development of parking areas next to vehicle-free zones through PPP is a common practice throughout the world.

- g. § 122, 125: proper positioning of stopped vehicles;

Although it is required that the vehicles are stopped leaving space for the safe movement of traffic, buses are commonly seen to stop in the middle of the road for embarking and disembarking of passengers. On highways, trucks are found to be stopped wherever they breakdown. The Police Officers are so preoccupied with getting the traffic moving that they rather push the damaged vehicle to the side than issue a ticket.

This is an issue related to safety education and strict enforcement. The result is better safety for all road users and less congestion.

- h. § 123: passengers to be seated;

Although it is generally enforced that the passengers are seated or allowed to stand only at suitable locations within a bus, riding on the bus roof is a common sight in the rural area and is apparently not penalized. At most, the police could do is to ask them to climb down from the roof. However, after traveling a certain distance, the passengers again climb back to the roof.

The solution is not in the hands of the Traffic police. Such cases are more common in the case of former night-buses plying daytrips in the hills. This could be avoided by awarding road permits to only buses suitable for the terrain.

Riding on the roof is also a necessity where the frequency of the bus service is too low. The TMO need to award road permit to an adequate number of buses so that the inhabitants in far-flung areas could be assured of adequate frequency.

In case the transport demand for passengers and buses is inadequate for separate bus and truck service to be commercially viable, the TMO needs to allow half-buses on such routes.

- i. § 127: vehicles carrying dangerous or oversized goods to use conspicuous signs;

Even within the city limits where the sudden application of brakes by a heavily loaded vehicle could lead to a collision with trailing vehicles, the leading vehicles often do not carry a warning flag.

The Traffic Police often stop and penalize vehicles with oversized cargo. More often, this is too harsh for a country where the number of appropriately sized cargo vehicles are limited. In many cases, the use of conspicuous flags suffices when the cargo being transported does not significantly obstruct visibility or could hit trailing vehicles while making a turning maneuver.

- j. § 130: compulsory use of seatbelt by passengers on the front in a car and use of helmets by all riders of motorcycles;

The police have been enforcing the seatbelt and helmet rule only to the driver. The front passengers of cars and pillion riders of motorcycles are surprisingly exempted. However, as per international practice, all riders (of not only a car but buses and trucks as well) need to use the belt, while all riders of motorcycles need to wear a helmet.

Now with the body of most of the buses being locally built and motorcycle helmets being manufactured in Nepal, after months of rigorous campaigning to educate the road users, the enforcement could begin. Only city buses and auto-rickshaw could be exempted for their low cruising speed as in other countries.

- k. § 132: vehicles to stop at zebra crossings when being used;

Instead of slowing down and stopping at zebras, vehicles are seen rather speeding up: resulting in unsuspecting pedestrians being hit.

This is a matter of strict enforcement. So that the drivers become aware of the location of zebra crossings, warning signs need to be erected. On city roads with heavy traffic and highway sections with high-speed traffic, pelican signals need to be installed in addition to zebra to assign priority.

- l. § 135: vehicles to drive on left;

Vehicles normally keep to the left in Nepal. Yet while driving at higher speed or when the road is free, the drivers tend to steer to the right and thereby sometimes even drive in the wrong lane. There have been sporadic attempts to enforce the lane discipline in urban areas, however, this remains a common problem on the highways.

Thus, enforcement of driving on one's lane should equally emphasize on driving within the designated speed limits.

- m. § 136, 137: pedestrian not to walk on travel lanes;

Non-availability of footpaths and zebra crossings is a serious problem along the SRN and in the cities. However, this should not be an excuse to wander on the pavement and jaywalk. The police regrettably do not penalize the pedestrian. This should change.

Segregation of pedestrian and motorized traffic should be a part of every road improvement project.

- n. § 138: prohibition on straying of domestic animals;

Municipalities are legally authorized to round up and auction animals on the road. However, the bulls are not sellable and thus, get back on the pavement somehow: requiring the Police Officers to manually push them out. In a few municipalities, the problem is so severe that the city councils routinely transport the stray animals to far-off forests.

In rural areas, chicken, ducks, and goats on the road pose a serious threat to road safety as well as the reason for frequent altercations between their owners and drivers. The problem could only be sorted out through changes made in the laws.

- o. § 142: prohibition to drive under the influence of alcohol or narcotics;

The law has not set any tolerable limit to the alcohol content in the blood. Though the permissible amount of alcohol consumption is also debated, the rate of night-time road crashes has gone down since the police started to strictly enforce the zero-alcohol provision.

Though occasionally police manage to catch users driving under the influence of drugs, the detection is difficult without taking blood samples unless the driver is heavily sedated.

- p. § 143: use of headlights in the night;

This is generally complied by the drivers unless the headlights suddenly go out of order. The newer cars and motorcycles even have non-extinguishing lamps.

The problem is rather not dipping of headlights for the comfort of the pedestrian and vehicles from the opposite direction. Glare by headlights from the opposite direction is one of the prominent causes of night-time road crashes on meandering sections of roads in the mountains.

- q. § 145: crash victims to be helped;

It is an archaic provision when the post-crash support was unheard of and the crash victims had to be rescued by passengers from other vehicles and the road-side communities. Though it is still relevant on the road sections with sparse traffic, the mechanism to provide first aid, call ambulances, and take the victims to the nearest trauma care facility needs to be ensured.

- r. § 147: prohibition on reckless driving;

As per police records, reckless driving and driving in excessive speed are the most common cause of road crashes. In many cases, police officers are found to attribute any cause to reckless driving in order to avoid detailed investigation. Reckless driving thus needs to be properly defined.

Part of the reason for attributing many crashes to reckless driving is that the police officers do not get adequate training on crash investigation. The other reason is that a different officer, than the one visiting the crash site, fills the crash record form. Thus, many important details do not get recorded in the process.

VTMA and VTMR provisions used by Road Agencies

Practically the following provisions fall under the jurisdiction of road agencies (whoever has constructed the road section: DOR, DOLI, or municipalities). However, as DOTM is legally responsible, both DOTM and the concerned agency have an excuse for improper implementation.

- a. § 115 (VTMR § 60): speed control through traffic signs and standing orders;

Although a standard part of SRN, speed limit signs are neither erected in required numbers nor reflect the safe driving speed. The signs, if erected, show either design speed (which is usually higher than safe speed) or ridiculously low speed limits (e.g.: 10kmph signs seen near army camps).

A pre-opening stage road safety audit is thus required to determine the right speeds and the right location for the signs. The audit should study the design speed, check the change in design speed due to any modifications made during construction, and their own assessment including driving on the road at different hours of the day and in different seasons.

- b. § 119, 120 (VTMR § 60): erection of traffic signs as per international conventions and their enforcement;

DOR and KMC have been erecting signs but not at all the required locations and in required numbers. Not all the erected signs are as specified by VTMR.

With the BBIN ready to get ratification, Nepal needs to be ready for vehicles driving in from different countries in the region having different sets of signs. Thus the sets of signs and

markings on the roads need to be modified to be compatible with the UN 1968 Convention on Road Signs and Signals. The VTMR needs to be amended accordingly.

- c. § 121: providing bus laybys and parking yard;

In the last decade, DOR has started to build bus laybys as a standard feature on SRN. DOLI and KMC also have been constructing whenever there is space for a bus or taxi. KMC is managing parking space by delineating a strip off the existing roadway. However, the available parking space is far from adequate and poorly managed.

This approach of building parking space “wherever the space is available” needs to change. Bus-bays, parking yards, and roadside stations are standard features of the road. Space for them needs to be acquired if not available so that their locations and spacings could be determined from a safety point of view.

- s. § 126: delineation of on-road work sites;

In contrary to the contractual requirements, on-road works are often left for days without a proper fence or marking, resulting in unsuspecting pedestrians and vehicles getting into crashes. The new Civil Code has finally made it a criminal offense to leave worksites unsecured. Nevertheless, the contractors need to be made aware of the requirement, and appropriate provisions are to be incorporated in contract documents so that the requirements comply.

- d. § 146: educating the general public;

The law requires that the general public be made aware of the meaning of traffic signs. However, the education effort should not be limited to this but should extend to other aspects of road safety.

2.2.8. Labor Act -2017, Labor Rules -1993

Labor Act -2017

In the case of crashes involving drivers and conductors (helpers), the Labor Act is invoked. The following provisions in the act are relevant from a road safety perspective:

- a. § 46.1.a.I/II: Vehicles on long routes shall have two drivers or they should be allowed to take a break at several locations during the journey;

These clauses iterate the provisions in VTMA § 103 and 104.

In practice, the provision is often ignored: basically for the next clause, which requires the drivers to be paid an allowance for working overtime. It is not stated in the law that this overtime working should not be for consecutive periods.

So that the desire for more allowance does not push the drivers to push for more trips than their capacity to endure, the police officers need to remotely know who is driving and for how long.

- b. § 46.1.f.I/II/III: Drivers could be fired if found to consume alcohol before reaching the destination of the journey.

This clause is even harsher than VTMA § 142, but the compliance is not up to the mark.

Though the majority of the drivers do not drink while driving, practically, it is difficult to charge drivers during a journey as the passengers still need to continue. Non-availability of breathalyzers with the police outside Kathmandu Valley makes it difficult to collect evidence of drink-driving.

Labor Rules -1993

In the case of crashes involving drivers and conductors, the following provisions in the rules become applicable.

- a. § 15: In case of injury, the employee will be provided with a full salary for a year in addition to the medical expenses.
- b. § 16, 17: In case of loss of body parts up to 5-year salary and in case of death up to a 3-year salary will be provided to the staff.

The compensation as above is possible only when the vehicles are insured. In the case of new buses, there is some form of insurance which though may not cover the above legal provisions. Old buses are often not insured. VTMA and VTMR provide several legal loopholes for the bus owner to escape from the liability.

In the next revision of VTMA and VTMR, the link to other laws (including the Labor Act) needs to be explored to rectify deficiencies in the laws that the offender could take advantage of. Until then, a strict requirement to fulfill the provisions in VTMA Chapter 8 (VTMR Chapter 7) is necessary.

2.3. REVIEW OF NEPAL'S COMMITMENTS TO THE GLOBAL COMMUNITY

In the 2007 Ministerial Conference on Transport in Busan, Nepal committed to cut down the number of road deaths by 50% as would be announced by the UN Decade of Action later in 2010. In the regional ministerial meeting of health ministers in 2007 under the aegis of WHO, Nepal was a signatory to the PHUKET Commitment to protect the vulnerable road users. Nepal has also endorsed the Post-2015 Development Agenda following the UN Millennium Summit in 2000 and the Stockholm Declaration in 2020.

2.3.1. Stockholm Declaration

The Third Global Ministerial Conference on Road Safety in February 2020 at Stockholm called for a first High-Level Meeting of the United Nations General Assembly on Road Safety at the level of Heads of State and government. The agenda was to mobilize adequate national leadership and advance international and multisectoral collaboration in all the following areas to deliver a 50% reduction in deaths and injuries by 2030 and on the way to achieve Vision Zero by 2050.

The conference was attended by Hon. Minister for Physical Infrastructure and Transport, Mr. Basanta Kumar Nembang.

The aspects covered by the declaration are:

1. Reaffirm commitment to the full implementation of the 2030 Agenda, recognizing the synergies between the SDG policy areas, as well as the need to work in an integrated manner for mutual benefits;
2. Address the connections between road safety, mental and physical health, development, education, equity, gender equality, sustainable cities, environment, and climate change, as well as the social determinants of safety and the interdependence between the different SDGs, recalling that the SDGs and targets are integrated and indivisible;
3. Call upon the Member States to contribute to reducing road traffic deaths by at least 50% from 2020 to 2030 in line with the United Nations High-Level Political Forum on Sustainable Development's pledge to continue action on the road safety-related SDG targets, including 3.6 after 2020, and to set targets to reduce fatalities and serious injuries, in line with this commitment, for all groups of road users and especially vulnerable road users such as pedestrians, cyclists and motorcyclists and users of public transport;
4. Call upon the Member States and the international community to address the unacceptable burden of road traffic injury on children and young people as a priority, increasing political commitment, by ensuring that the Global Strategy for Women's, Children's and Adolescents' Health delivers necessary action on road safety;
5. Ensure political commitment and responsibility at the highest level and establish regional,

national and subnational strategies and action plans for road safety and contributions from different governmental agencies as well as multi-sectoral partnerships to deliver the scale of efforts required at regional, national and sub-national levels to achieve SDG targets, and that these strategies and efforts are transparent and public;

6. Encourage the Member States that have not yet done so to consider becoming contracting parties to the United Nations legal instruments on road safety as well as applying, implementing and promoting their provisions on safety regulations, and ensure that legislation and standards for road design and construction, vehicles, and road use are consistent with safe system principles and are enforced;
7. Include road safety and a safe system approach as an integral element of land use, street design, transport system planning, and governance, especially for vulnerable road users and in urban areas, by strengthening institutional capacity with regard to road safety laws and law enforcement, vehicle safety, infrastructure improvements, public transport, post-crash care, and data;
8. Speed up the shift toward safer, cleaner, more energy-efficient and affordable modes of transport and promote higher levels of physical activity such as walking and cycling as well as integrating these modes with the use of public transport to achieve sustainability;
9. Encourage and incentivize the development, application and deployment of existing and future technologies and other innovations to improve accessibility and all aspects of road safety from crash prevention to emergency response and trauma care, with special attention given to the safety needs of those road users who are the most vulnerable including pedestrians, cyclists, motorcyclists and users of public transport;
10. Ensure timely access to high-quality emergency and long-term health care services for the injured and recognize that an effective post-crash response includes also mental, social and legal support for victims, survivors, and families;
11. Focus on speed management, including the strengthening of law enforcement to prevent speeding and mandate a maximum road travel speed of 30 km/h in areas where vulnerable road users and vehicles mix in a frequent and planned manner, except where strong evidence exists that higher speeds are safe, noting that efforts to reduce speed, in general, will have a beneficial impact on air quality and climate change as well as being vital to reducing road traffic deaths and injuries;
12. Ensure that all vehicles produced and sold for every market by 2030 are equipped with appropriate levels of safety performance, and that incentives for use of vehicles with enhanced safety performance are provided, where possible;
13. Ensure that an integrated road safety approach and minimum safety performance standards for all road users are a key requirement in road infrastructure improvements and investments;
14. Call upon businesses and industries of all sizes and sectors to contribute to the attainment of the road safety-related SDGs by applying safe system principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and to include reporting of safety performance in their sustainability reports;
15. Call upon public organizations at all levels to procure safe and sustainable transport services and vehicles and encourage the private sector to follow this example, including the purchase of safe and sustainable vehicle fleets;
16. Encourage increased investment in road safety, recognizing the high rates of return of road injury prevention projects and programs and the necessity of scaling up activities to meet the road safety-related SDGs;
17. Emphasize the importance of monitoring and reporting progress towards the achievement of our common goals and, as appropriate, the Voluntary Global Road Safety Performance Targets agreed by the Member States, and call upon the World Health Organization to

continue to collect, publish and disseminate data through the series of Global Status Reports on Road Safety, leveraging as appropriate existing efforts including those of regional roadsafety observatories to harmonize and make road safety data available and comparable;

WHO will be publishing a report in 2024 on an inventory of proven strategies and initiatives that have successfully reduced fatalities in member countries.

2.3.2. Sustainable Development Goals

The SDGs, set in 2015 by the UN General Assembly and intended to be achieved by 2030, is part of UN Resolution 70/1, the 2030 Agenda. It is a collection of 17 global goals, serving as a blueprint to achieve a better and more sustainable future for all. Unlike its predecessor: the MDG, SDG has the following road safety specific targets:

- a. Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents.

Many countries, including Nepal, failed to achieve the goal set by the Decade of Action for Road Safety 2011–2020 i.e., to halve the number of road crashes. Though there have been a few initiatives, for example: drafting of a bill on road safety, the establishment of RSC, and developing a National RSAP. However, a national consensus could not be built to enhance road safety and subsequently, the required resources could not be channelized in the focus areas. As a result, road deaths increased by 7% to 8% per year within the 2011-2020 period.

The 3rd Global Ministerial Conference on Road Safety in February 2020 in Stockholm has extended the time frame to halve the road deaths to 2030 and to achieve Vision Zero (i.e., no road deaths) by 2050.

- b. Target 11.2: By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons.

Nepal has set a sub-target of 50% for the proportion of the population that has convenient access to public transport, by sex, age and persons with disabilities, and 80% for access to paved roads within 30 minutes of walking, by 2030¹².

However, until now, the only visible policy action is reserving 2 seats for women and 2 seats for differently-abled in city buses in Kathmandu valley. Due to a flaw in the reporting mechanism on progress made by local governments, the length of paved roads built by the 7 provincial governments and 753 municipalities is no known. It is also not known whether the walking distance to reach an all-season road is within 30 minutes from the settlements in the country.

The UN summit for the adoption of the post-2015 development agenda was attended by Rt. Hon. Deputy Prime Minister Mr. Prakash Man Singh.

2.4. REVIEW OF THE GLOBAL COMMUNITY'S EXPECTATION FROM NEPAL

Not all international conventions and treaties on transport are clear on road safety. For example, the Motor Vehicles Agreement for the Regulation of Passenger, Personal and Cargo Vehicular Traffic Between Bangladesh, Bhutan, India, and Nepal (BBIN MVA 2015) does not have any provision on road safety whereas when the convention goes into effect, loaded trucks driven by drivers and vehicles accustomed to different terrain and different traffic sign convention can move freely among the 4 countries.

Nepal is a signatory to the 2003 Intergovernmental Agreement on the Asian Highway Network, which defines the network links through the continent as well as their technical requirements. There are a

¹² Needs Assessment, Costing and Financing Strategy for Sustainable Development Goals, NPC, 2018

few treaties to which Nepal should consider accession and many more whose immediate ratification may not be a priority. In fact, MOPIT informed that it has been considering a list of UN resolutions¹³ for ratification.

Conventions whose endorsement is to be considered by Nepal are as follows:

2.4.1. 1958 Agreement on Vehicle Regulations

Agreement concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipment and parts made in 1958 defines the minimum requirements that automobiles must satisfy in order to be approved for sale or use in a particular country or region. There has been a lot of amendments to the original agreement to keep pace with higher expectations from environment protection, road safety, and comfort point of view.

Though Nepal neither produces nor exports motor vehicles and as all the automobiles available in the market satisfy the agreement and subsequent amendments, in order to stop the import of substandard accessories such as helmets, brake, tire, and seat-belt, rather than the accession of the agreement itself, the national standard for the accessories in conformity with the 1958 Agreement need to be developed.

2.4.2. 1968 Convention on Road Traffic

The Convention on Road Traffic is designed to facilitate international road traffic and to increase road safety by establishing standard traffic rules for motor vehicles and trailers in international traffic. It lays down the condition for entry, registration number, distinguishing signs, identification marks, technical conditions, hand signal of the Traffic Police, allowed driving maneuvers, driving license, and international driving permit. The treaty also defines the correct road user behavior, which is to be incorporated into legislation and codes of conduct of the ratifying countries.

Among SAARC countries, only Pakistan has ratified the treaty. The legal principals in it form the basis of traffic law in many countries, including Nepal. DOR's Road User's Handbook is based on it.

Nepal requires to ratify this treaty, incorporate the provisions fully in VTMA and VTMR to make the roads safer. Nepal also needs to update and widely disseminate the Highway Code: including the international traffic entering the country.

2.4.3. 1968 Convention on Road Signs and Signals

The Convention is designed to increase road safety and aid international road traffic by standardizing the signing system for road traffic (road signs, traffic lights, and road markings) in use internationally.

Many European and former USSR countries have ratified the treaty but not the USA and SAARC countries (except for India). Traffic signs in it are used in many countries. Though Nepal has not formally ratified the convention, the guidelines on road markings and traffic signs in VTMR and Traffic Sign Manual published by MOPIT, are based on it. This needs to be updated in the VTMR.

Considering that the vehicles from BBIN countries might start using the roads in Nepal shortly, Nepal should consider applying for Accession of the treaty.

2.4.4. 1975 Agreement on Minimum Requirements for Driving Permits

The 1975 Agreement on minimum requirements for the issue and validity of driving permits elaborate the 1968 Convention on Road Traffic. This agreement applies to driving permits other than learner- driver permits, driving permits for riders of mopeds, or driving permits for pedestrian-

¹³ *Improving Road Safety in Nepal: National Strategy, Goals and Targets; National Workshop, ESCAP/MOPIT, 2019*

controlled motor vehicles. It sets out the minimum requirement of the examiner, theoretical part of the test, practical test, skill sets required, test sequence, duration, minimum standards of mental and physical fitness.

Nepal requires to ratify this treaty, and incorporate the provisions fully in VTMA and VTMR to produce qualified drivers for the local traffic as well as to issue International Driving Permits.

2.4.5. 1997 Convention on Technical Inspection of Vehicles

So far, only former USSR countries, China, and countries in mainland Europe have acceded to the 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of such Inspections.

Though it is important that the countries in the region from where vehicles are likely to be driven into Nepal accede the agreement, none of SAARC countries are in it. It is because, the legal requirement for parameters to be tested in SAARC countries are very limited and vague as in Nepal. In India and Pakistan, though there are now test facilities run by TÜV, the legal requirement is quite low.

Before ratification of the treaty, Nepal needs to establish a network of VFTC throughout the country in adequate numbers and use the test parameters including, those specified in the treaty.

2.4.6. 1998 Convention on Global Vehicle Regulations

1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts which can be fitted and/or be used on Wheeled Vehicles serves to reduce technical barriers on international trade than to promote safety and protection of the environment. This is the reason for all major motor vehicle exporting countries having ratified it, whereas countries such as Switzerland have opted out.

As Nepal is neither a vehicle producing nor exporting country, the existing provision in VTMR, that prohibits modifying the properties of purchased motor vehicles suffices.

2.4.7. 2018 WHO Voluntary Targets for Road Safety

Setting indicators for voluntary global performance targets relating to road safety risk factors and service delivery mechanisms can assist national and global road safety policy efforts. Thus in response to the assignment given in May-16 by the UN General Assembly, WHO has come up with 12 voluntary targets, together with achievement indicators and source of verification data (**Error! Reference source not found.**) for member states through consensus.

Although these are still not ratified by the UN General Assembly, and as such, are not binding. Nevertheless, any National RSAP to be developed by Nepal should incorporate the elements as the ratification (possibly with a few minor changes) is certain within the validity period of the National RSAP.

2.5. REVIEW OF DEPARTMENTAL GUIDELINES

2.5.1. Publications of Department of Roads

Out of the DOR publications, the Heavy Vehicle Management Policy 2005 and Road Safety Notes from 1996 to 1998 are relevant for road safety. Although the documents are available on the department's web-portal, they are hardly referred during road design and construction.

As the documents are already more than two decades old, they need to be updated. Nonetheless, as the information on them is still usable, the department needs to promote its use among its staff as well as by the design and supervision consultants.

Heavy Vehicle Management Policy 2005

The policy is a misnomer here as it was approved by MOPPW to be implemented by DOR alone and was developed as a covenant to ADB support for Third Road Improvement Project.

The policy focus is basically on the effect of overloaded vehicles on pavement deterioration. Nevertheless, it also discusses enhancing road capacity by increasing average vehicular speed and enhancing road safety by adhering to vehicle manufacturers' specifications and road design standards. The recommendations to continue with 10.2 MT axle load limit as per the policy is now being reviewed.

Road Note 2: Design of Safe Side Drains

Side drains are an integral part of roads and are an essential means of preventing structural damage to the road. From general observation, it is apparent that their design and construction are not given enough thought. Instead of choosing the size to satisfy hydrological and non-silting requirements, the sizes seem to be selected in *ad hoc* manner from among standard sections resulting in expensive, oversized, unsafe drains.

Loaded trucks and buses are seen trapped into the unnecessarily deep drains, unable to climb out, and often with serious passenger casualty and considerable damage to the vehicles themselves. The other effect of overdesigning is heavy siltation, requiring substantial resources to restore the functionality before the next Monsoon.

The Road Note 2 demonstrates how "tick-mark" shaped drains sections could be designed to satisfy the hydrological requirements as well as provide safe passage of vehicles or pedestrians over them.

Road Note 4: Road Safety Audit Manual

It is one of the pioneering publications at a time when road safety audit was not widely conducted in many European countries. It is noteworthy that the Director General at that time issued a standing order to audit all roads under SRN using the manual.

It outlines an explanation of Road Safety Audit: what is to be audited, why to be audited, who should conduct the audit and at what frequency, and so on. The document explains the process of auditing different categories of roads with simplified checklists.

Road Note 5: Delineation Measures

The safety note explains why delineation is important on roads and how could it be achieved by using the center and edge lines, delineator posts, or even painted old bitumen drums. It demonstrates why the faulty practice of constructing masonry confidence blocks are to be discontinued.

The document further introduces newer methods of chevron signs and cat's eyes for better delineation. For each of the recommended methods, standard to be adopted as well as installation and maintenance requirements are outlined.

Road Note 6: Safety Barrier

Upon widening and improvement of Prithvi Highway in 1996, it was possible to drive with higher speed resulting in a sudden spike in the rate of crashes. This note was prepared based on the experiments along the highway by using different safety barriers and studying their role in reducing road crashes.

Barriers of masonry, plain concrete, reinforced concrete, steel beams, and gabion boxes were used.

The note explains why a plastic-barrier is found to save lives and reduce vehicle damage than a rigid or elastic one. The road note explains the way to construct and maintain recommended barrier types.

Road Note 7: Safety at Bridges

Very often widening of bridges is not a part of the road-widening project. The result is wide road punctuated by narrow bridges, leaving wide gaps on the flanks through which vehicles can easily plunge into the river.

This publication is based on the analysis of road crashes along Prithvi Highway but is applicable to all bridges on SRN. As a part of the research, some of the bridges were widened while few others were provided with pedestrian walkways and sturdy railings, resulting in a significant reduction in pedestrian casualty. Similarly, the gaps at the bridge approaches were closed with masonry, plum concrete, reinforced concrete, steel beams, and gabion boxes.

Subsequent analysis of road crashes indicated that masonry and concrete walls, though lasts longer, result in high casualty, whereas, gabion boxes by giving way to the impact reduce the passenger casualty. The steel beam barriers, if to be used, need to be more than 1.5m tall and with a sturdy concrete foundation to be effective.

Road Note 8: Identifying and Treating Accident Sites

Identification of road cashblackspots and treating them effectively is the theme of the note.

Taking actual road crashes as the starting point is of fundamental importance in road safety engineering because it is not possible to reliably identify and analyze hazardous locations from the look of the road alone. As it takes a long time to collect reliable crash data for all parts of the road network and road crashes happen in many forms and many locations, it is not feasible nor useful to analyze each of them in detail. The key is to try and identify locations where road crashes are most frequent (crash clusters) as these are potentially worthwhile sites for investigation and treatment as a single site, route action, mass action, or area action.

Road Users' Guide

Not all the districts in Nepal are connected by road even today. In many districts, the traffic volume is too low to assess the risk of using it. Many road users lack awareness and knowledge regarding traffic rules and signs. New recruits in Traffic Police might have difficulty in managing the traffic in a safe and internationally understood way. The Road Users' Guide is a sort of Highway Code that guides road users on the proper use of the road and helps understand different road features. The document is extensively used in road safety campaigns by Traffic Police.

Traffic Sign Manual

Due to legal reasons (DOTM also within MOPIT is legally empowered for the administration of traffic signs), the manual was published by the Ministry of Physical Planning and Works (the predecessor of MOPIT).

The manual exists in two volumes. Volume 1 provides description, application, location, and variation of traffic signs and road markings (regulatory signs, warning signs, information signs, supplementary plates, traffic signals, and road markings). These signs though generally follow the 1968 UN Convention on Traffic Signs, allows certain signs that the drivers in India and Nepal have become accustomed to, having been using it for along time. For economic reasons road markings with double lines (for example: no overtaking, overtaking from left/right lane only) have not been included.

Volume 2 of the manual provides the detailed dimension of the sign plates and patterns on them for different types of roads as well as their color.

The signs and markings in the manual need to be included in VTMR as well, so that the compliance become legally binding.

2.5.2. Publications of Department of Transport Management

DOTM has published the following nine road safety-related guidelines in 2019. DOTM and TMO staff have been made familiarized with the guidelines through a series of training camps and have been directed to follow the guidelines strictly.

On the other hand, the Public Transport Code of Conduct 2010, also issued by DOTM, falls short of being specific to be effective. The code does not substantially cover road safety. For example, it advises buses to stop at designated stops only, but, does not pinpoint the stopping location as road edge (and not in the middle of the road, which is usually the case).

Guideline on workshops and repair centers

The purpose of the guidelines is to control the haphazard opening of vehicle body fabrication workshops and vehicle repair centers. The guidelines provide a set of checklists to be used by DOTM officials before determining to award the permit. This makes the licensing system objective and transparent.

The guideline also requires that the workshops and repair centers are established at a safe location, have all the necessary space, tools, staff, and resources for the intended purpose. This will, in turn, improve the quality of the vehicle fleet.

Guidelines on bus route allocation

Instead of the ad hoc allocation of routes based on requests by bus operators, the guidelines formalize a method that requires the recommendation of a committee comprising of road, safety and mechanical engineers from DOTM/TMO, Traffic Police, and road agency responsible for the road. This committee will recommend route allocation for type and frequency of vehicle to be only upon:

- Desk study of road characteristics and characteristics of the vehicle for which route is requested;
- Field visit to access traffic and road characteristics;
- Test run using the vehicle for which route is requested.

Guidelines on loading control of goods vehicles

The guideline is related to the axle load limits specified in the VTMR as well as the establishment and operation of weighing stations.

Guidelines on operation of driver training centers

The guidelines categorize driver training centers based on the type of vehicles (2-wheelers, 3-wheelers, cars, buses and trucks, heavy equipment). The practical tests are standardized (passenger and goods vehicle: Figure of 8, Narrow Plank for 2-wheelers, U-Turn, Traffic Light, Bumpy Ride, Ramp, and Garage Parking; heavy equipment: driving, operation). Facilities required at the test centers and test conditions are also standardized.

Guidelines on vehicle fitness inspection and testing

The two guidelines provide further details on inspection and test parameters set by the VTMR, viz: vehicle registration plates, condition of the service brake and mechanical brake, seats, horn and noise from the exhaust system, windscreen wipers and washers, glass, rear-view mirrors, speedometer,

safety belts, steering wheel play, doors/locks, lamps, direction indicator, tell tales, malfunction indicators, body, chassis, underbody, tires, wheels, wheel bearings, brake fluid, steering linkage, suspension system, brake system components, electrical system, fuel system, transmission and drive train.

Guidelines on vehicular emission test

The guidelines detail emission test, test procedures, and test conditions for fossil fuel engines as required by the VTMR.

Guidelines on the fabrication of bus body

The guidelines define the elements of passenger buses and trucks whose body is to be fabricated in Nepal over imported chassis. For acceptance, it also defines the test procedure, such as: Body Structure Strength Test, Acceptance Criteria (Roll-Over Test, Stability Test and Test of Joints, Joint Strength Test), and procedure for Type Approval.

Guidelines on school buses

The guidelines specify the mechanical and physical characteristics of school buses and the framework for their operation.

2.6. SITUATIONAL ASSESSMENT

For the assessment, unpublished data on length and traffic in SRN from DOR, local roads data from DOLI, vehicle fleet-related data from DOTM, location of health facilities from DOHS, and road crash data from Nepal Police has been obtained.

2.6.1. Data Limitations

Nepal Police is the primary source of data on road crashes and resulting casualties. Although it is said to be mired by under-reporting, the data quality is expected to be better than that generated by WHO's macro-level data model and that recorded by local health facilities (record only autopsy verified road deaths).

The Police are also the source of data on road safety education activities as they are involved in carrying out almost all such planned activities. Even if any other agency conducts a safety campaign, the Police are invariably asked to support it.

With yearly updates, the data on the length of SRN should be adequate for analysis. With the federal budget for local roads no longer channelized through DOLI, the regular reporting by the municipalities to DOLI has almost stopped. DOLI has thus devised a method to update the data based on demand for maintenance funds: which RBN still provides through DOLI. Thus, the projected data on village and urban roads are used for the analysis.

Data on vehicle registration and driving license were collected by TMO and compiled by DOTM. With the TMO now under the provincial government, the data reporting frequency and its quality have suffered. Even then, the number of registered vehicles and licensed drivers are misnomers as the data sets are not corrected for scrapped vehicles and inactive drivers. The contribution of vehicles and their drivers, especially for heavy trucks, is not accounted for in the database.

2.6.2. Review of road casualty data

2,485 individuals lost their lives on the roads in Nepal in the year 2017/18. Out of the total lives lost, 28% were pedestrian. Of all pedestrian deaths, 44% were hit by bus or truck. This not only highlights

the dire need for pedestrian facilities but also demands stricter vehicle fitness tests and control of cruising speed for buses and trucks.

While the age group of drivers involved in road crashes has remained stable over the years, about half of the crashes involve drivers in the age group between 25 to 40 years old. Any policy on drivers needs to address this age group (Figure 5). This is a big group covering college students on motorcycles, office goers on cars, and bus and truck drivers. People in this group have different upbringing, educational level, and economic level. They belong to different geographical locations and are exposed to different driving conditions. Thus, a single policy or a single awareness creation theme is likely to be ineffective.

The population pyramid of Nepal shows a plateau for 16 to 25 years of age and a spike after 25. Yet the rate of percentage of casualty is high for this 16-to-25-year age bracket (Figure 6). Addressing the cause of road crashes involving people in this economically active age group is important also for the financial wellbeing of the country. On the other hand, any policy to enhance road safety awareness to population under 16 is universally considered as an investment for a sustainable future.

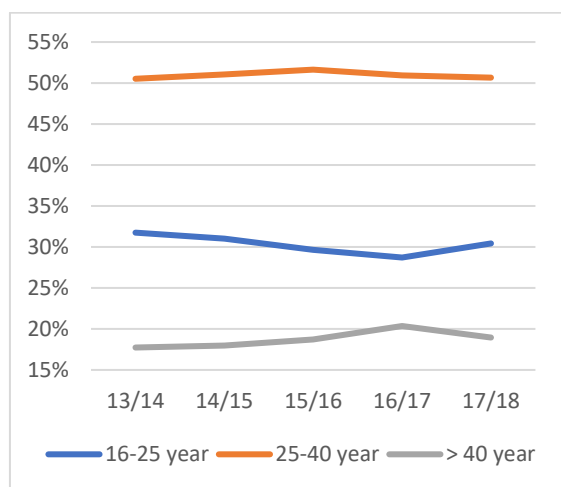


Figure 5: Age group of drivers in road crashes¹⁴.

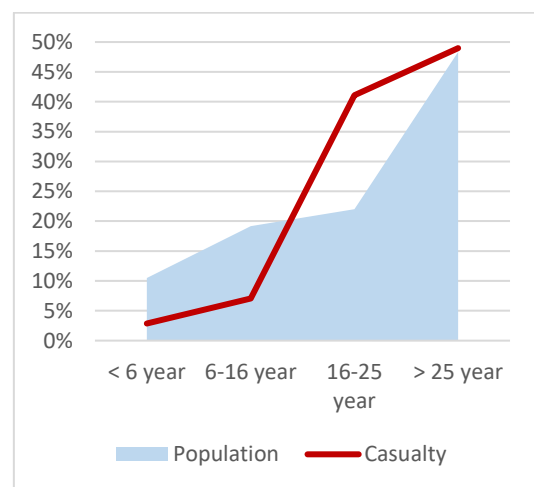


Figure 6: Casualty vs population pyramid¹⁵.

With 646 crashes per 100 km, urban roads have the worst safety record in comparison to 63 and 3 crashes for the same length in SRN and LCN. This is logical considering the higher level of traffic on urban roads. However, even with very low traffic, the number of road crashes on LCN over the past 5 years have been hovering near 1,300 per year. Without lowering this significant figure, achieving the SDG target 3.6 is not possible.

In the case of LCN, apart from speeding, factors such as the condition and loading of vehicles, conditions of pavement, and road geometry are more pronounced for road crashes.

In Nepal, motorcycles can be considered as intra-urban mode of transport. In the year 2017/18, motorcycles were involved in 38% of all road crashes (Figure 7) and were responsible for 1,032 road deaths¹⁶ (Figure 8).

¹⁴ Unpublished data from Traffic Directorate, Nepal Police

¹⁵ National Population and Housing Census 2011, CBS, Nepal, 2014

¹⁶ Unpublished data from Traffic Directorate, Nepal Police

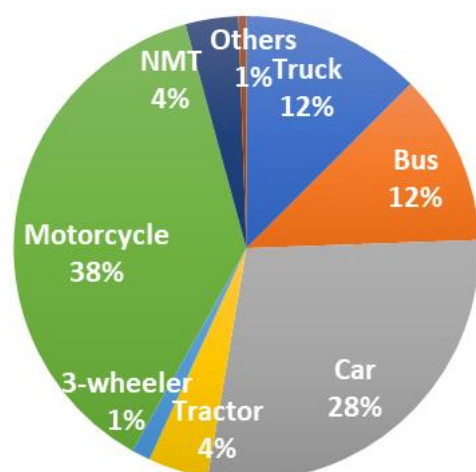


Figure 7: Vehicle types involved in road crashes.

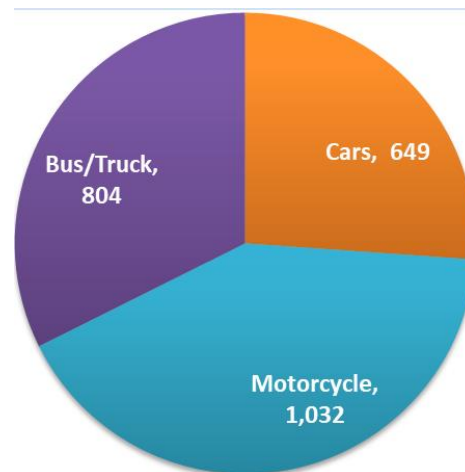


Figure 8: Fatalities by vehicles type.

There are basically two different group of motorcycle users with different types of crash risks. In many middleclass families, the motorcycle is used as a family car (Figure 9). While the speed is low in this case, the maneuverability and visibility of the driver is severely constrained. In contrary, the problem with the younger riders is speeding and inappropriate overtaking maneuver. In both the cases, the vehicle is pushed beyond its capacity. Out of all motorcycle related deaths in year 2017/18, the death of pillion riders accounted for 26% (Figure 10). This is very significant as a survey in the same year, showed that 73% of all motorcycle trips comprised of single riders. The newer models with higher engine capacity but without any holding provision, are especially unsafe for pillion riders.

If motorcycles are to be allowed until the increased reliability of public transport system prompts commuters to make a modal switch, there needs to be a limit to the engine capacity of motorcycles and the seating arrangements should be made comfortable and safe for both the riders.



Figure 9: Use of motorcycle as a family vehicle.

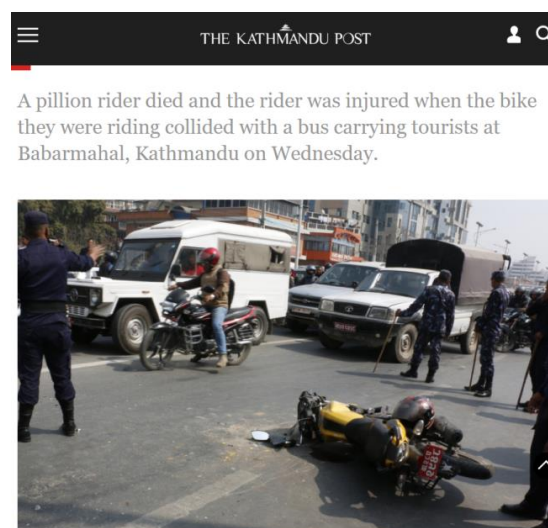


Figure 10: Frequent headlines on pillion riders (Photo Credit: The Kathmandu Post).

The top ten causes of road crashes are presented in Figure 11. Reckless driving (red line on the primary axis) and driving too fast (dotted red line on the primary axis) are the two major causes of crashes. The first one is very subjective, with any unknown cause attributed to reckless driving. Besides, it might have been easier to blame the driver who is not present at the site to defend himself/herself. It is suspected that in the crashes under this category, several causes come into play.

Nevertheless, with 74% of the crashes on average attributed to reckless driving, corresponding to 9,000 cases in the year 2018/19, the crashes in this category clearly need further investigation with priority given to multi-casualty crashes.

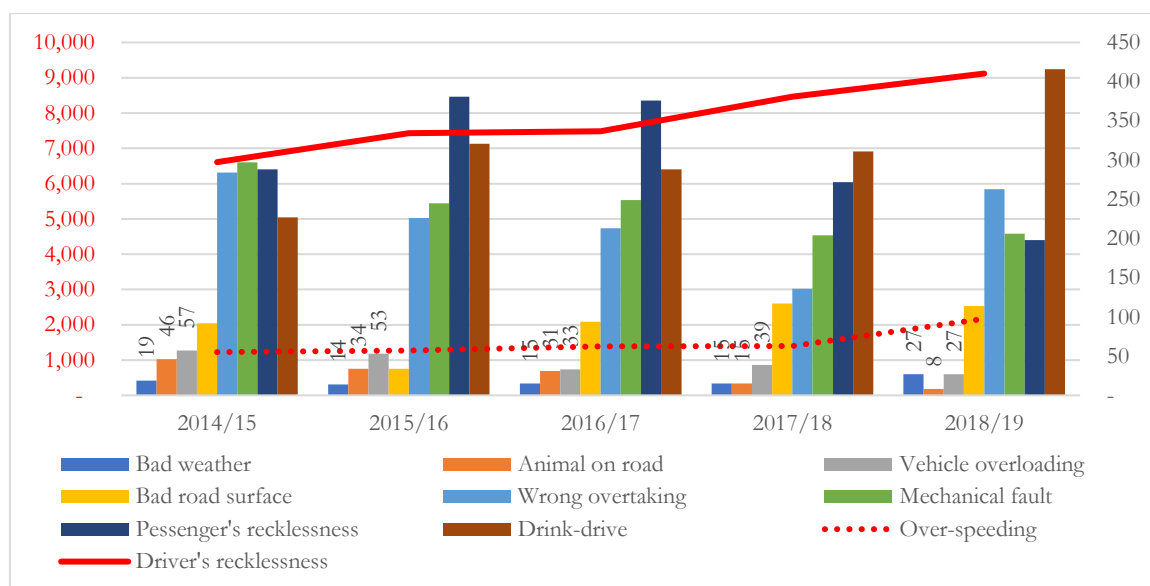


Figure 11: Top 10 causes leading to road crashes¹⁷.

On average, 14% of crashes are recorded to be caused by driving too fast. But how fast is “too fast”? In the absence of speed limit signs on the roads and limited numbers of vehicle speed measuring equipment with the police, the estimation of speed is rather subjective. Instead of equipping the police with costly handheld radar guns, the feasibility of other methods such as fixed induction loops or real-time monitoring of GPS fitted in vehicles needs exploring.

Despite vigorous police action against driving under the influence of alcohol in the cities, it is still the third most frequent cause of road crashes. No monthly drinking pattern is evident in the last five years, and the drivers seem to indulge in drinking all year round. A recent observation by the police has indicated the number of incidents has been growing in highways with an increasing number of bus and truck drivers found to be under the influence of alcohol or other intoxicants. This is an alarming trend as the detection is difficult in the highways due to scarcity of testing kits, unavailability of blood sample collection facilities, and police check-posts located far apart.

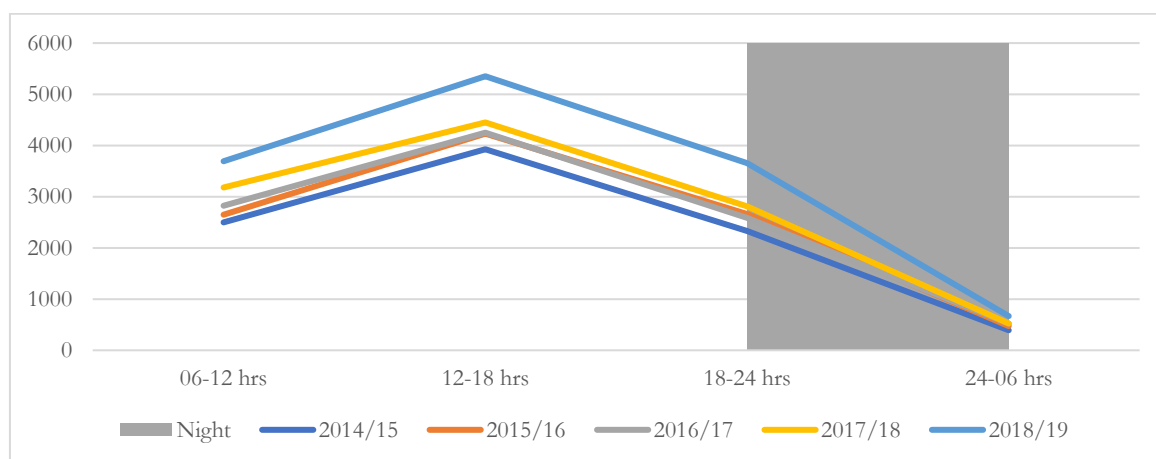


Figure 12: Road crashes by time of day.

In Nepal, roads are devoid of street lights. In addition, old vehicles have dim incandescent headlights, whereas the newer and the faster ones have dazzling diode lamps that are irresponsibly never dipped to the consternation of the approaching pedestrian and other traffic. Thus, it is no surprise over 30% of all crashes (Figure 12) have been occurring in the night. To make the roads safe round the clock, in addition to road lamps, delineation, conspicuity of roadside objects, and measures to keep the speed within safe limits are required.

¹⁷ Unpublished data from Traffic Directorate, Nepal Police

2.6.3. Review of the road network

As per records of DOR and DOLI, there is 597 km of URN roads, 45,475 km of VCN roads, and 9,256 km of SRN roads, that can support motorized traffic (Figure 13, with URN shown on secondary axis). 60% of SRN roads are reported to be in good or fair condition. The condition of VCN and URN roads is not known. Although the bad road surface was found to cause 114 only crashes in the year 2018/19 (Figure 11), it is serious because the numbers are on an increasing trend. As poor water management has been cited as the major cause of bad road by DOR publications, it needs to be improved not only to lower the VOC but also to decrease the rate of crashes.

Nepal's commitment to achieving SDG 11.2 by providing 50% of its people convenient access to public transport might have already been achieved in Bagmati Province with 1 km of road for every sq. km area and in Gandaki Province with the same length required to serve 242 people (Figure 14).

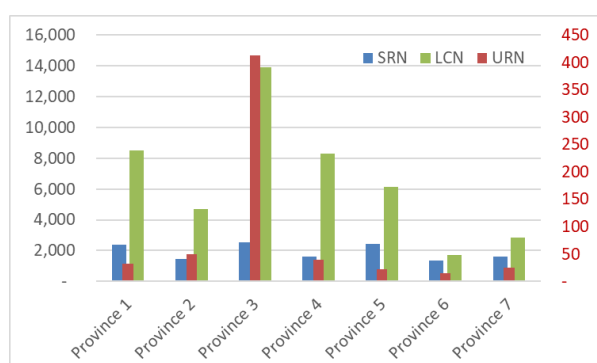


Figure 13: Length of different roads in provinces.

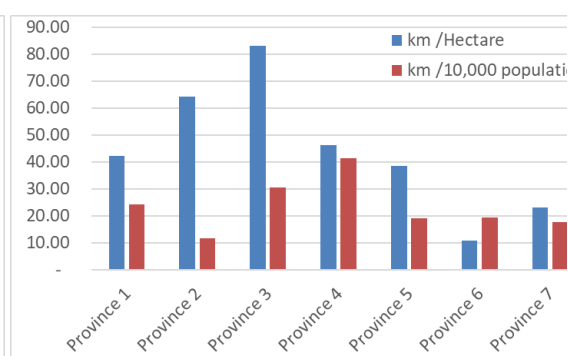


Figure 14: Road densities.

Similarly, the target of availing paved road within 30 minutes of walking to 80% of the people might also have been achieved. However, as seen in Figure 14, the length of road available per unit area in Karnali Province and per unit population in Province No. 2 indicate a more intensive investment is required in increasing the quantity and quality of roads to fulfill the SDG requirements by 2030. This is possible only when the related plans and programs of municipalities are facilitated, closely monitored, and the office bearers made to feel the responsibility. So far, there have been only a few cases of planned long-term actions to make the roads safer by the provincial and local governments.

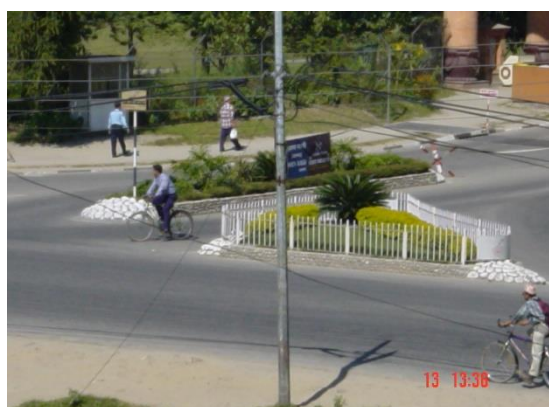


Figure 15: Forgiving traffic island at Kathmandu airport.



Figure 16: Maitighar Mandala Rotary.

A few pioneering works were done by Kathmandu Municipality in the past in improving roads and islands. For example, at the junction of access road from Kathmandu Ring Road to the airport (Figure 17), the edges of the islands are made forgiving to the benefit of fast traffic on the Ring Road. At Maitighar, several houses on the central island were removed to create the Maitighar Mandala Rotary (Figure 16). Now the momentum seems to be lost in the need to cater to other pressing sectors.

The same is the case of municipalities elsewhere. Though the local communities are concerned about improving road infrastructures, in the absence of appropriate knowledge and guidance, they end up

erecting a cacophony of traffic signs (*Figure 17*) or building temples at sharp bends with crash history (*Figure 18*). As these may create further hazards, both the road administrators and the Traffic Police need to be vigilant against such practices and provide proper solutions. For example, a warning sign at both approaches to the narrow bridge and continuous yellow lines on bridge curb stone might be adequate in the first case. To prevent vehicles from falling off the valley due to the “mysterious pulling force”, sturdy barrier on the outer edge of the road might be required for low speeds. If a higher cruising speed (than the design speed) is anticipated, the road superelevation shall be required to be raised to counteract the centrifugal force.



Figure 17: Signs erected by a roadside community in Kaski.



Figure 18: Shrine built by the local community against a “mysterious pulling force” at a sharp bend in Baitadi.

2.6.4. Review of vehicular fleet

Up to December 2019, DOTM registered more than 3.5 million motorized vehicles in 11 different categories. It is not known what percentage of these vehicles is actually in use, used intermittently, or scrapped altogether. The growth of registered vehicles in different categories varies widely. The density of roads is not uniform throughout the country, so is the vehicle distribution and resulting level of congestion. If the number of vehicles is allowed to increase unchecked, it is likely to reach 15.6 million by the year 2030 (*Figure 19*).

There is no arrangement to register NMT, although few attempts were made in the past by municipalities.

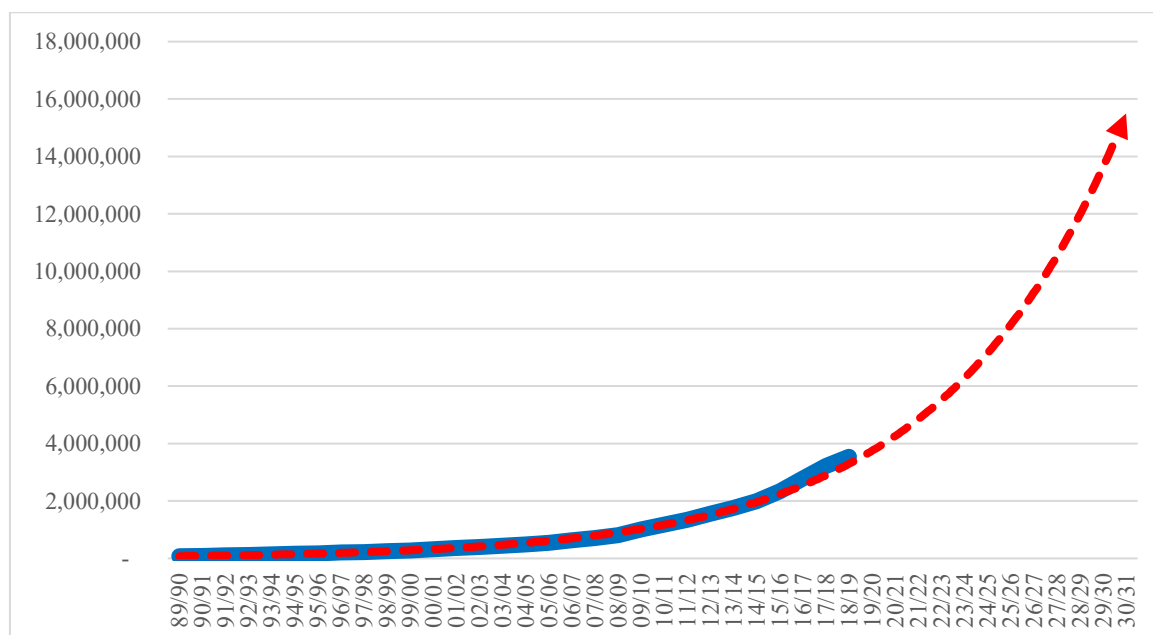


Figure 19: Trend of vehicle fleet growth.

What is alarming is the sheer number of motorcycles: which has moved from an intra-city mode (Figure 20) to all-purpose transportation on all roads (Figure 21). Throughout the country, motorcycles are replacing bicycles, while its growing popularity has led to an increase in road casualties as well. It has raised serious safety concerns in the country.

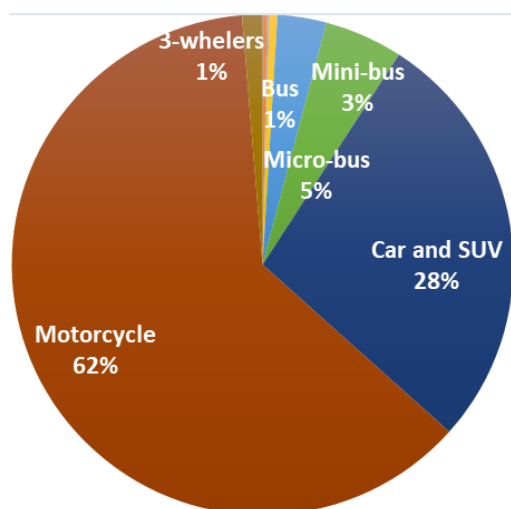


Figure 20: Typical urban vehicle fleet (Maharajgunj, Kathmandu).

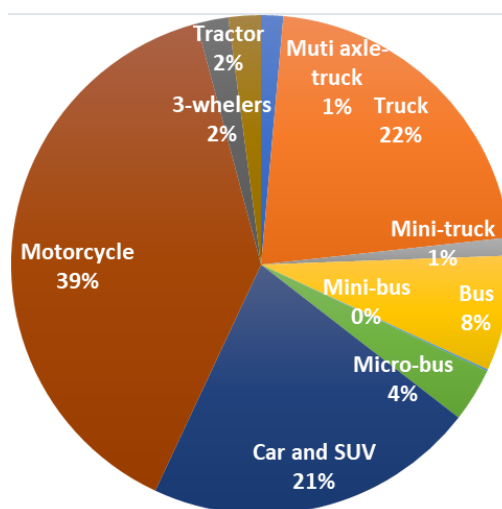


Figure 21: Typical highway vehicle fleet (Pathlaiya, Bara).

In the cities on the south, the manual rickshaw is being replaced rapidly by mechanically-driven electric and diesel-powered rickshaw. As the cruising speed of the mechanical rickshaws is less than 30 kmph, their contribution to road casualty is still low.

The contribution of tractors in road casualty is rather big: especially on unpaved roads, where buses do not ply due to low passenger demand and bad road surface.

With the legal provision for compulsory roadworthiness test not being carried out scientifically and weak enforcement of speed limits, the road crashes and the resulting casualties are still high for buses and trucks. The on-road check against overloading is based on visual inspection of the Police Officer on duty. Although India has ratified the “1998 Agreement Concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts”, the cheaper variety of cars imported from India are equipped with seatbelt only in the front seats (In India, buses are manufactured without any seatbelts at all). To control this, Nepal needs to amend the VTMA to incorporate the provisions of the 1998 Agreement and make the compliance to the provisions as a prerequisite to the international traffic entering Nepal.

2.6.5. Analysis of Exposure to Risk

In the year 2018/19, there have been 13 road fatalities per 100,000 population in Province 3 and 5. However, this does not give an actual picture of the exposure of risk against fatalities as fewer people in Province 5 have access to roads than in Province 3.

The globally accepted measure for risk is the use of road or vehicle-kilometers of travel. With a high fatality rate per billion vehicle-kilometers of travel¹⁸, the roads in Province 2 and 6 need the highest level of attention, as seen in Figure 22. This should not be interpreted that the roads in Province 1 and 3 are safe (with 5 fatalities per billion vehicle-kilometer), as even a single fatality is tragic. The risk only signifies the priority for investment in road safety.

¹⁸ Adapted from Road Inventory Survey and National Traffic Count, HMIS, DOR, 2019

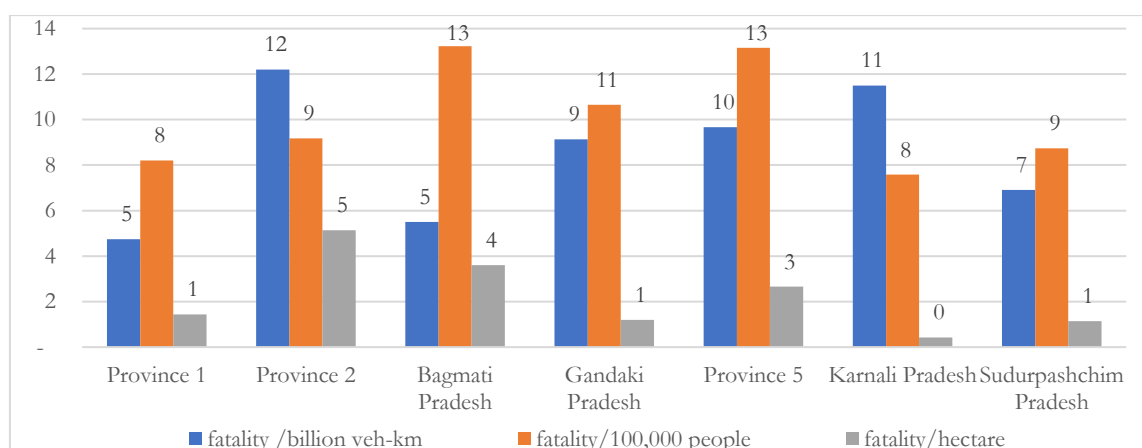


Figure 22: Exposure of risk against road fatality.

2.6.6. Analysis of available Post-crash Support

As of April 2019, there are 125 hospitals of different categories, 198 primary health care centers, 3808 health posts, 374 urban health centers, 299 community health units, and 59 other health facilities, in addition to 2071 non-public health facilities in Nepal. Many of these are not equipped to treat road crash victims. Out of hospitals, 6 are of regional level, 11 are still termed as zonal hospitals, 5 are registered for teaching purpose, 11 are central hospitals, 56 are of district level, and 13 numbers of 15-bed hospitals. Although very few hospitals are located along major transport corridors, almost all are connected by a motorable road and thus can receive road casualties.

The 14th Periodic Plan had provisioned for trauma facilities in all hospitals near SRN roads. However, this has not yet been achieved. The 15th Plan has further planned to provide each municipality with a primary hospital equipped for primary trauma care service. Achieving this will be a tough task considering the resources at disposal.

Figure 23 compares hospital densities in different provinces¹⁹. The density in reference to population and area might be useful to increase the availability of health services to the inhabitants. However, for quick response in case of road crashes, hospitals in provinces with trauma care facilities need to be prioritized for Province 1, 4, and 7.

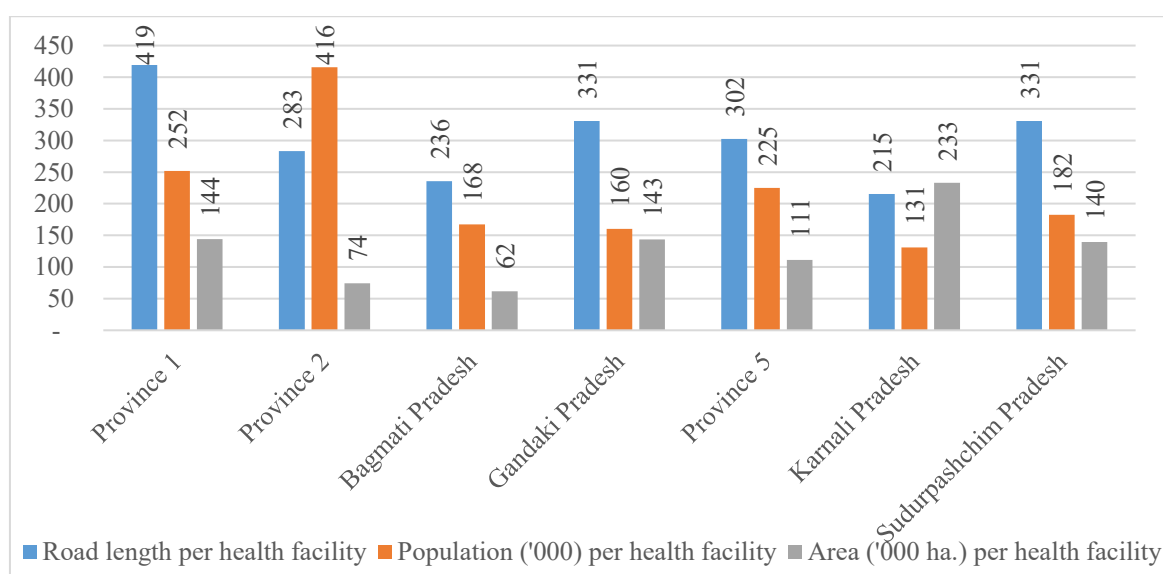


Figure 23: Hospital density.

¹⁹ HMIS Database 2074/75, Department of Health Services, MOHP, 2019

3. GAP IDENTIFICATION

3.1. GAP IDENTIFICATION BY LEGISLATIVE AND BUREAUCRATIC ARMS

To meet the SDG target 3.6, the number of road deaths should not have exceeded 875 in the year 2019/20. But, instead, the fatalities have already jumped to 2,789 in the year 2018/19. If the trend continues, it may reach 4,500 by 2030/31 (Figure 24). The Stockholm Conference 2020 has provided a grace period of 10 more years. Thus, Nepal needs to bring the road fatalities down to 875 by 2030 and achieve Vision-Zero (i.e., zero numbers of road fatality) by 2050.

Sweden has made significant progress towards Vision Zero, with crash fatalities down to 3 per a hundred-thousand population. It was achieved through coordination between all the government and private agencies in Sweden and a strong commitment to supporting the national policy. If similar national interest could be raised in Nepal, achieving the above goals is not impossible.

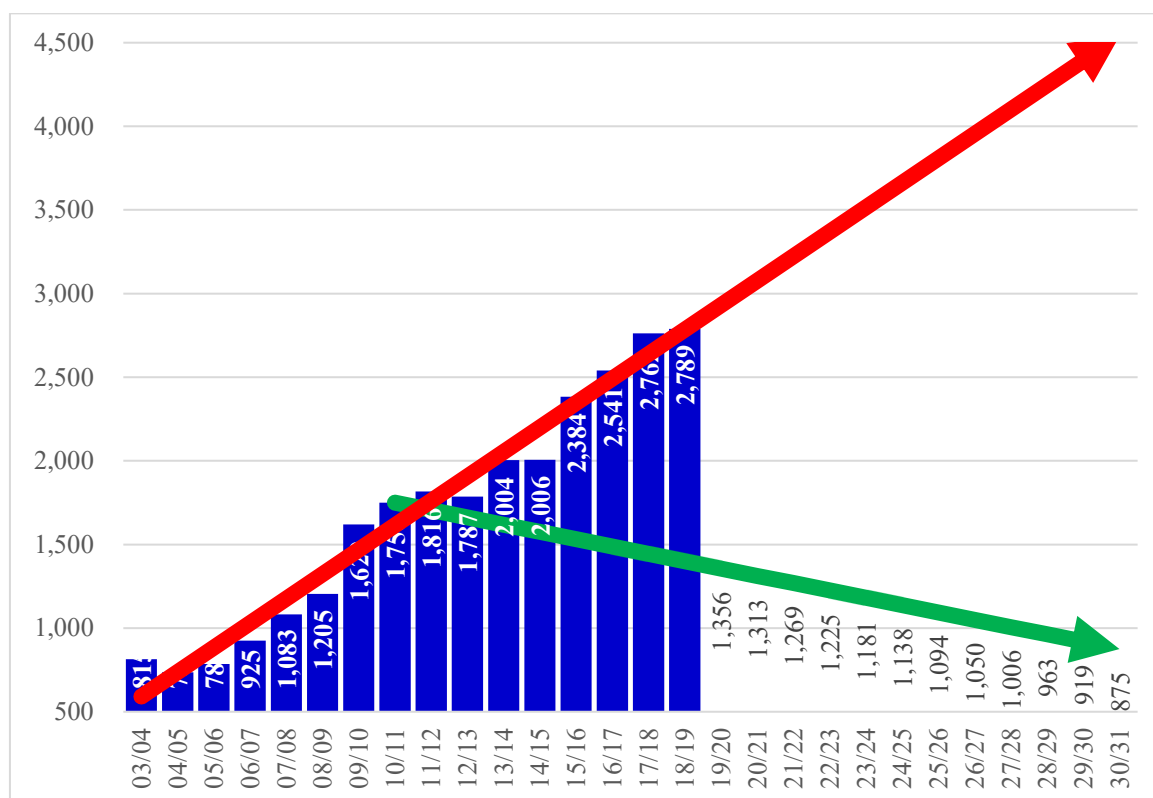


Figure 24: Trend of road fatality²⁰ and target as per the SDGs/Stockholm Agreement.

The Stockholm Conference was attended by the Honorable Minister for MOPIT as well as a group of parliamentarians belonging to different political parties and senior bureaucrats. Both the executive and the legislative arms of the government are aware of Nepal's road safety status, as well as the need for improvement and the opportunity to become a responsible member of the global community.

MOPIT facilitated a meeting between the members of the Development and Technology Committee of Rt. Hon. Federal House of Representatives and the Consultant's team on June 26, 2020. In the discussion following a slide presentation by the Consultants team, the parliamentarians highlighted the following:

- Road safety is an important priority agenda.
- The parliamentary road safety subcommittee has been actively carrying out discussions with different ministries, experts, and other stakeholders. The soon to be prepared report upon further consultations will set a path for better road safety in the coming years.
- The National RSAP 2013/20 needs to be critically evaluated for the success and failures of strategies and activities proposed.

²⁰ Unpublished data from Traffic Directorate, Nepal Police

- The road crash scenario is so grim that the possibility for additional pillars reflecting the specific road safety needs of Nepal need to be explored especially on road user negligence and poor test procedure for driving permits.
- DOTM alone cannot improve road safety in the country as it lacks both financial and human resources and needs inter-ministerial coordination. Furthermore, a small team under a single ministry cannot deliver desired actions, and a shared response involving ministries related to health, finance, home affairs, etc. is required.
- With the new federal government structure, establishing a linkage between road safety councils at federal, provincial, and local levels is very significant.
- NRSC established in India might be an advisory body rather than an executive body like that in Sri Lanka. The National RSC should include the minister of MoPIT as the coordinator and secretaries of relevant ministries, minister of MoPID from each province, few road safety experts, as well as the Chief District Officers need to join as members.
- Negligible progress has been made on pillar 5: Post-crash response. Improvement of emergency medical services and rehabilitation centers should be prioritized.

3.2. ADDRESSING GAPS IDENTIFIED THROUGH NRSC MEETING

The draft report on National RSAP 2021/30 was reviewed by the 4th meeting of Nepal Road safety Council, held on July 5, 2020, at MOPIT. The meeting required to align the strategies with the lead agencies so that it becomes easier to incorporate the strategies and corresponding actions in their corresponding long-term plans for better synergy. The draft report has been modified accordingly.

3.3. ADDRESSING GAPS IDENTIFIED THROUGH PROGRESS REVIEW WORKSHOP

A workshop organized by MOPIT and sponsored by RBNwith participation from the NPC, government agencies, non-government agencies, and academia on July 1, 2019, to evaluate the progress against National RSAP 2013/20. The participants discussed the progress against the targets, identified the gaps, and came up with the following policy-level resolutions to address the gaps:

- Revision of National RSAP in the context of the new federal system of governance including, compliance to meet SDG requirements is recommended, and the development of policy, plan, and program for the province and local level.
- Expedite promulgation and ratification of the Road Safety Act.
- An ad-hoc Road Safety Council shall be formulated in case the bill remains to be time taking and secretariat to support the council's day-to-day activities.
- Amendment of provisions in the existing Acts and Regulations shall be made in line with the relevant UN Conventions.
- An integrated crash-related database system shall be developed, and its effective application in research shall be made along with the establishment of a Road Crash Research Centre.
- Procedural guidelines for road safety audit shall be developed for strategic roads based on the level of service and as well for non-strategic, provincial, urban/ village roads.
- Road Safety Notes published by DOR shall be updated.
- Road safety benchmark strategy for all types of roads in various levels of government central, provincial, municipal, rural shall be developed.
- A formal mechanism for certification of road safety auditors shall be established.
- Methodology to prioritize investment in road safety projects considering technical, economic, and social issues as parameters shall be developed.

- Ensure implementation of existing safer vehicle guidelines as well as its monitoring; update such guidelines regularly based on the research, international practices in conformity with local practice and legal framework.
- Private sector involvement in vehicle testing while adopting PPP Model or Private investment, and develop appropriate mechanisms for monitoring.
- All levels of school education shall include appropriate road safety topics in curricula and appropriate researches at the university level.
- The first response training to different tiers of rescuers shall be standardized.

Although the resolutions are not comprehensive, the inclusion of these in the 15th Periodic Plan and mobilizing resources in the indicated direction will definitely bring significant changes.

In fact, all concerned agencies have a few relevant policies related to reducing the number or severity of road crashes in their respective long-term strategic documents. Still, as the implementation of all such strategies is not up to the mark, the combined outcome has not been as expected.

3.4. GAPS IDENTIFIED THROUGH AREA-WISE CONSULTATIONS

United Nations General Assembly in March 2010 proclaimed the period of 2011 to 2020 as the Decade of Action for Road Safety. Its goal is to stabilize and reduce the forecast level of road traffic deaths around the world through activities under five defined Areas of road safety.

In the context of Nepal, NRSC, MoPIT, DOR and DoLI, DoTM, RBN, Nepal Police, Ministry of Education, and Ministry of Health are the focal agencies for the five Areas. As planning for workshops at a separate venue needs considerable duration, the Consultants organized consultative workshops in the office of the following agencies:

- Area I: Department of Transport Management on June 12, 2020
- Area II: Department of Roads on July 2, 2020
- Area III: Vehicle Fitness Testing Office on June 15, 2020
- Area IV: Metropolitan Traffic Police Directorate on June 23, 2020
- Area V: Department of Health Services on June 24, 2020

The workshops comprised of a brief presentation covering the framework of the task, findings of literature review, review of Nepal's road safety performance in terms of fatalities and injuries, and review of actions/activities in the Road Safety Action Plan (2013-2020). Further, brainstorming sessions were held to institutionalize road safety as well as identify new priorities and emerging areas of concern across all five areas. The role and road safety-related responsibilities of the lead agencies, as well as the required collaboration among various agencies, were explored.

In the workshops, the area-wise actions from National RSAP 2013/20 were discussed and modified to form area-wise actions for National RSAP 2021/30 in order to address the gaps identified.

3.5. GAPS IDENTIFIED THROUGH PROVINCIAL CONSULTATIONS

Consultative meetings were held at Provincial Headquarters and municipalities as follows:

- Province 5 on June 24, 2020
- Karnali Pradesh on June 20, 2020
- Bagmati Pradesh on June 25, 2020
- Sudurpachhim Pradesh on June 27, 2020

Rather than to provide solutions, subsequent to an introductory slide presentation, the Consultant team steered the workshop to focus on the following:

- Road safety scenario in the province;
- Economic and emotional impacts of road crashes;
- Factors responsible for road crashes;
- Possible measures to reduce the crashes through the effort at the community level, municipal level, province level, and federal level;
- Need for Provincial RSC and its relation with the National RSC and Municipal RSC
- Resources to be mobilized and rationale of such allocation in view of the investment required for other pressing needs;
- Leading and coordinating agencies; and
- Possible legal measures.

Guided discussions and follow up through emails were the main tools used to collect information.

The gaps identified are:

- a. Though the provinces and municipalities are aware of the grim road crash trend, they lack the knowledge to tackle it.
- b. The provinces and municipalities aim to undertake activities that can produce instant results. But, they are not aware of low-cost solutions.
- c. Even if they want, they are not authorized to install any physical structure to reduce crash severity on SRN roads, which fall under the jurisdiction of the federal government.
- d. The provincial and local governments are always under pressure to increase the road length than improve safety or riding quality.
- e. Multi-year approach required for road safety is absent from their planning frames.
- f. No suggestions are sought from municipalities by the corresponding Provincial Governments in the planning phase resulting in a lot of duplications and omissions.
- g. The provinces and municipalities would welcome any initiative by the federal agencies and would help if asked for assistance in implementing such initiatives.
- h. Proper structure of the Provincial Road Safety Council needs to be suggested on the National Road Safety Action Plan along with the linkage between Provincial and National Road Safety Council.
- i. The proper linkage between the Provincial Road Safety Council and Road Safety Units at the municipal level is one of the important aspects for the provincial government to consider and address properly.
- j. Need to establish a speed control mechanism to be introduced in sections of National Highway or Provincial Highway that lies within urban areas.
- k. Weighing Stations, Vehicle Fitness Centre, and other physical infrastructure needed should be included.
- l. Capacity building of concerned institutions, training, and education and awareness campaigns need to be included in regular programs.
- m. Preparation of Road Safety Notes and Manuals for Highways, Provincial Highways and Local Roads/Urban roads to be included.
- n. Federal Government should allocate and transfer budget to Provincial Government as Conditional Grant and/or Matching Grant for road safety.
- o. Provision of Internal Road Safety Audit of Highways and Provincial Highways should be incorporated.

- p. Safer mobility in Terai, especially, the issues related to cycle, rickshaw, and slow-moving vehicles such as auto, carts, and pedestrian need to be addressed.
- q. Make provisions for Trauma Care center/ hospital nearby crash blackspot and at certain intervals along the National Highways and Provincial Highways.
- r. Addressing the issue of disabled persons and other vulnerable road users.
- s. Provide the implementing agency for each activity planned under the action plan and devise targets for performance evaluation.
- t. Assure the compatibility with Safe System Approach, other global strategies, and commitments.
- u. An introduction of the National RSAP to be prepared in the Nepali language for improved understanding.

The measures to address the identified gaps have been incorporated in the proposed National RSAP 2021/30.

3.6. GAPS IDENTIFIED THROUGH MUNICIPAL CONSULTATIONS

Consultative meetings were held at Provincial Headquarters and municipalities as follows:

- Birendranagar Nagarpalika on June 19, 2020
- Dhangadhi Upamahanagarpalika on June 23, 2020
- Hetauda Upamahanagarpalika on June 25, 2020

An effort was made by the consultant's team in facilitating the municipal office bearers and officials to rank the challenges faced the municipalities in tackling road safety issues, define nature of the problem, possible solutions within the capacity of the municipalities, and the assistance required from provincial and federal governments.

Some of the suggestions received are as follows:

- a. Lack of expertise in the field of traffic safety at the municipal level.
- b. Emergency medical treatment to road crash victims should be free of cost.
- c. Improvement of the licensing system through on-road tests and rigorous spot checks to prevent driving without a permit.
- d. Road safety furniture is always given less priority during road construction and needs prioritizing.
- e. The funding and operational mechanism regarding Road Safety Unit within the municipality need to be properly addressed in National RSAP.
- f. Formation of National and Provincial Road Safety Council will not be effective unless it is supplemented with proper authorization and accountability.
- g. First Responder training needs to be provided to the local people.
- h. Road safety awareness campaigns need to be carried out intensively at all schools and local community levels, with support from local non-governmental organizations, traffic police, and other concerned authorities.
- i. Road Safety Education needs to be included in the school curriculum.
- j. Universities need to carry out research on various fields of traffic engineering and road safety and recommend concerned stakeholders to address them through plans, policies, and guidelines.
- k. Speed management needs to be addressed properly while considering the expansion of

existing roads to 4-lanes, as crashes associated with excessive speed are prevalent in the urban territory of the highway.

- l. Speed limit in urban areas needs to be restricted to 30kmph.
- m. National RSAP needs to focus on improving emergency medical services including, fully equipped ambulances with paramedics on the highway.
- n. Strict enforcement against driving under influence.
- o. Over speeding and usage of the helmet must be strictly enforced while ensuring that Traffic Police are equipped with required logistics.
- p. Vehicle Fitness Testing Center needs to be operationalized in each Metropolitan and Sub-metropolitan municipalities.

The measures to address the identified gaps have been incorporated in the proposed National RSAP.

4. PROPOSAL FOR NEPAL ROAD SAFETY ACTION-PLAN 2021-2030

With the federal structure of the state, there is now more authority and resources at the provincial and municipal levels than in the past. Likewise, the expectations of the local governments to deliver is also high. Thus, any new version of National RSAP should have leverage on the expectations and attempt to sync these with their capacity to deliver.

The proposed action plan needs to encompass the lessons learned during the implementation of the previous plan, desk study, and inputs from the stakeholders in order to address the gaps in existing plans, policies, laws, and guidelines, and achieve the national goal of bringing down the road deaths to about 875 by the year 2030.

4.1. VISION

Nepal's vision for road safety needs to be in line with the commitments made in the global community. In this regard, the commitment to achieve the relevant SDG goals and its reiteration through the third Global Ministerial Conference on Road Safety "Achieving Global Goals 2030" should define the vision. The following vision statement is thus proposed:

Achieve Vision Zero by 2050.

4.2. GOAL

The goal for the period of the present action plan is also in line with Nepal's commitment in the global community, that is:

A 50% reduction in road deaths and injuries by 2030.

4.3. STRATEGIES

Adapting the recommendations made by the Global Road Safety Partnership²¹ to suit the local context, 12 strategies are proposed.

Strategy 1

Some of the existing legal provisions in Nepal are actually ahead of their times. If all the provisions were enforced in full, the road safety situation would have been much better. As VTMA was ratified 27 years back, when the number of motor vehicles in Nepal was only 3% of today's volume, road safety was not a visible issue. Considering the time required for a major revision of the act, it is logical to make minor updates in the act and address the newer issues through a new bill specifically on road safety. Although all the stakeholders feel the need for an exclusive road safety act, a longer promulgation period is required to deal with their difference of opinion in its scope and focus.

Hence,

Create an empowering legal framework (promulgate the Road safety Act and adopt the National Road Safety Action Plan).

The lead for this strategy needs to be taken by the National Road Safety Council.

Strategy 2

With more than 1.5 million foreigners using the roads in Nepal during their visits and about the same number of Nepalese travelling on roads in other countries while staying out each year, the country

²¹ Van den Berghe, W., Fleiter, J.J. & Cliff, D. (2020) "Towards the 12 voluntary global targets for road safety. Guidance for countries on activities and measures to achieve the voluntary global road safety performance targets" Vias institute Brussels and GRSP Geneva.

cannot stay aloof of the global trend on road safety. As countries may have different systems for driving, vehicle certification, driving permits, and vehicle number plates, ratification of the corresponding resolutions assures the visitors on what to expect on the roads and maintain safety. The ratification of the legal tool could be a major encouraging factor to visit Nepal. Although many clauses in VTMA and VTMR are modelled after UN resolutions on transport management and road safety, the country cannot reap the full benefits of the legal tools without acceding them and amending the local laws for full compatibility.

Thus,

Ratify road safety-related UN legal tools (accede to road safety-related UN legal instruments).

The lead for this strategy needs to be taken by the National Road Safety Council.

Strategy 3

The current version (year 2013) of Nepal Roads Standard focusses mainly on the standard engineering features and does not cover any newer concepts to facilitate road safety. The same is the case with the design standard for rural roads published a year earlier. While the rest of the world is incorporating safety features based on network-level safety assessment to protect vulnerable road users, and some of the countries are even starting to define mobility as a function of safety (and not the other way round), the road administrators in Nepal are struggling with corrections warranted by safety audits aiming to create forgiving roads.

Thus, the need of the day is:

Take road safety into consideration while designing new roads (develop safe design standards, consider requirements of vulnerable road users, and create forgiving roads).

This strategy needs to be incorporated in the strategy documents of the road administrator agencies (DOR, DOLI, MOPID).

Strategy 4

The SRN in Nepal has been developed in stages. The voluntary surrendering of land ownership by road neighbors has brought the urban roads in the present state. The alignment of LRN is almost entirely dependent on the popular aspiration. In all the above categories of roads, safety has never been a determining factor in development. Consequently, narrow bridges, closer headwalls of culverts, narrow/absent walkways, tight curves, priority undefined intersections, lack of streetlights, frequent use of exceptional gradients, and sometimes even negative super-elevation are very common. Instead of systematic correcting these through road safety inspections and audits, focus on improving only the driving surface has been resulting in fatal outcomes. The immediate focus needs to be on improving riding quality and safety on SRN rather than extending the network coverage.

Now is the time to,

Improve existing roads with safety considerations prevailing over mobility (conduct network-level safety assessment of all roads with findings incorporated into improvement plans, focus on improving quality/safety over increasing road length).

This strategy needs to be incorporated in the strategy documents of road administrator agencies (DOR, DOLI, MOPID).

Strategy 5

Although road crashes are not desirable events, any such event is also a learning opportunity. The

MAAP5 road crash recording system from TRRL adopted in 1996 provided the basis for many research leading to the implementation of crash prevention measures and publication of technical guidelines. The indigenous RAIMS system being piloted presently is even better in ease of recording crash details, data management, analysis, and retrieval. The system needs to be rolled out to cover the whole of the country so that the crashes could be monitored, and the effectiveness of preventive measures could be appraised.

Thus, the strategy should be:

Nationwide rollout of RAIMS (use road crash data to detect any pattern, devise preventive measures, and examine the efficacy of such measures).

The lead for this strategy needs to be taken by Nepal Police.

Strategy 6

Even if Nepal ratifies the 1958 agreement produces on provisions for vehicles, their systems, parts, and equipment related to safety and environmental performance, the quality of the vehicles and thereby road crashes resulting from mechanical failure will not reduce unless a network of VFTC is established and the bus/truck fabricators and vehicle service centers are brought under a strict monitoring regime. On the other hand, Nepal needs to proactively determine the minimum standard for the vehicles to be imported to prevent the importers explore ways to influence government decisions in their favor.

Thus,

Improve vehicle standards (require new and existing vehicles to meet corresponding performance requirements as per the UN Global Technical Regulations).

This strategy needs to be incorporated in the strategy documents of DOTM.

Strategy 7

Practically saying, speed should not have been of any importance in Nepal, where the lengthiest highway is only 1,028 km long and the biggest city is only 10 km across. However, the drivers are seen to rush at every opportunity resulting in over a thousand crashes each year. Although it is a matter of imposing and enforcing speed limits, this is not possible with the traditional approach of deploying more police personnel.

So,

Facilitate prevention of over-speeding (ascertain safe speed for different roads or areas and enforce the speed limits).

This strategy needs to be incorporated in the strategy documents of road administrator agencies (DOR, DOLI, MOPID).

Strategy 8

Motorcycles and cars are the two leading vehicle types involved in road crashes. Although the government aims to encourage a modal shift from these to mass transit alternatives, the market forces will need some time before this happens considering the present reach and frequency of public buses. It is crucial to address the growing number of crashes and casualties involving motorcycles and cars. It is not difficult to achieve this if the existing legal provisions are diligently followed, that is,

Use of protective gear by motor vehicle users (enforce the use of helmet by both the motorcycle rider and pillion rider as well as enforce all motor vehicle occupants to use safety belts).

This strategy needs to be incorporated in the strategy documents of DOTM.

Strategy 9

Quite a few educated people in the cities get into road crashes due to negligence. This is a case of strict enforcement of traffic rules. Nevertheless, not all settlements are connected by motorable roads in Nepal, and there may still be many people who have never seen a motor vehicle in their lives. Besides, every year about 600,000 children of school-going age come out from the confines of their homes. A large percentage of these are exposed to the risk of being hit by motor vehicles on their way to school. An effective way of minimizing the risks is to educate them. In absence of an exclusive agency conducting road safety education in Nepal, despite a favorable legal mandate, the Traffic Police has practically taken over the responsibility over the years.

Thus,

Nobody should get into road crashes due to ignorance (formalize the mandate of Traffic Police as the focal agency for road safety education and enhance their capacity to fulfill the responsibility)

This strategy needs to be incorporated in the strategy documents of education administrator agencies (MOEST, MOSD) and the Traffic Police.

Strategy 10

Not giving any room for discussion on the allowable limit of blood-alcohol level and errors in measuring it, the present laws have zero-tolerance on driving under the influence of alcohol or a psychedelic substance. Although it may seem a bit draconian, police action against about 30 to 60 thousand drink-driving cases per year highlights the need to be strict and the need for continued police action against:

Continue the action against driving under the influence (continue enforcement of the legal provision of zero tolerance to alcohol or any psychoactive substances while driving).

This strategy needs to be taken up by the Traffic Police.

Strategy 11

All over the world, the governments are pulling out from providing commercially viable services and divesting from infrastructure for which the private sector might be interested. Encouraging the private sector to build and operate road-side refreshing centers and VFTC as well as issuing driving permits and vehicle registration plates in Nepal is possible, considering their effectiveness in enhancing road safety and the effect of the spinoff in the local economy.

Thus, it is the time for:

Gradual introduction of PPP in road safety-related infrastructure and services (use PPP as the main funding model to establish and operate roadside refreshment centers, VFTC, issuing driver permits, and providing vehicle license plates).

This strategy needs to be incorporated in the strategy documents of MOPIT and DOTM.

Strategy 12

With the nationwide standardization of driving tests, though the skill gap among the drivers getting their permits from the Capital and the provinces has been declining, the knowledge and skills of the majority of Nepalese drivers are not in par with the drivers in the countries adopting Vision Zero. If Nepal aims to achieve the global goal of zero on-road fatality by 2050, the drivers need to be trained by instructors with international driving license, should practice on driving simulators to improve

their reaction time, and be able to understand and follow the driving rules.

In other words,

Enhance the skill and knowledge of drivers (through a nationwide standardization of driving test procedure in confirmation to the corresponding global standard).

This strategy needs to be incorporated in the strategy documents of transport management agencies (DOTM and TMO).

Strategy 13

In case of a crash event, the potential rescuers should be able to quickly reach the crash site, administer first aid, and dispatch the victims in ambulances. It should be possible to call appropriately equipped ambulances to any part of the country so that the vehicles could get the victims to trauma centers within the golden hour. All these require proper planning, communication, and management to render:

Timely emergency care of Road crash victims by instituting trauma care system at National, Provisional, and Municipality level that includes a timely response to crashes, followed by pre-hospital, hospital and post-hospital care and related formalities.

This strategy needs to be incorporated in the strategy documents of the health facility administrator agency (DOHS).

4.4. ACTION PLAN

For logical segregation of the measures and also to facilitate global comparison, the actions to prevent and manage road crashes are grouped under 5-Areas as defined in the Global Plan for the Decade of Action 2021-2030²² and adopted by the UNECE in its 82nd session (ECE/TRANS/2020/9). These areas interconnect the earlier 5-Pillars of the global plan for the Decade of Action 2011–2020 and provide the countries to adapt to the UN Declaration²³.

A synopsis of the action, clarification on the action, and the output indicator are given in the subsequent sections. Further elaboration on responsible leading and supporting agencies and the corresponding monitoring framework for the desired output is given in *ANNEX 2*.

4.4.1. Area I: Multimodal Transport and Land-use Planning

Safety should be one of the main considerations for city planning and planning to fulfill the mobility needs of the citizen. Failure of the public transport system is more responsible for the astronomical rise in number in private vehicle population in the cities in Nepal than their affordability. What is required is a multimodal transport planning where the different modes of transport coexist depending on their reach, optimum use of available space and carrying capacity but without compromising on safety.

In Nepal, most of the available space for traffic and parking are taken up by the private passenger vehicles (motorcycles and sedan cars) creating perpetual congestion. To decongest the city while at the same time enhancing road safety, a range of interventions as follows will be required.

Action 1. Introduction of safe system approach as an integral element in land use planning, city planning, road design, transport system planning, and governance.

This is a prerequisite proposed by the Stockholm Declaration 2020.

²² Global Plan for the Decade of Action for Road Safety 2021-2030, UNECE, 28 October 2021

²³ UN General Assembly Resolution A/Res/74/299

The performance will be measured through:

- The approach needs to be reflected in the Road Safety Bill under promulgation
- The approach needs to be reflected in landuse plans, settlement development plans, and road network plans.

Action 2. Segregate road users

With settlements springing up along transport corridors, there needs to be a policy of constructing a segregated pedestrian walkway and NMT lane as a part of all road construction/ reconstruction/ rehabilitation package. Thus, all road development projects to have provision to segregate different modes of traffic.

Thus, it is required to:

- Segregate pedestrians, bicycles, NMT, and other slow-moving vehicles from fast-moving vehicles along SRN Roads (atleast at and nearby settlement areas).
- Segregate fast-moving traffic on opposing lanes whenever the cruising speed is likely to exceed 40 kmph
- Bicycles and other NMT to be allowed only on roads suitable for them
- Ensure separate operation permits are issued for motorcycles to be used on highways and city roads

Action 3. Study on the possibility of authorizing/ prohibiting vehicle use based on the traffic demand, terrain, altitude, and type of road.

SDG 9.1 aims to "develop quality, sustainable, reliable, and resilient infrastructure". Thus instead of the local practice of using tractors (damages pavement), and bus with roof rack (leading to the overturning of the bus), or truck (little sitting space), vehicles similar to the combined bus-truck vehicles being used in mountainous roads in Europe could be explored for use in Nepal.

Similarly, motorcycles to be used in urban areas should have low engine capacity, comfortable seats, and a holding point for the pillion rider, whereas, the bicycles should be safe for use during both low (e.g., night-time) and high visibility conditions.

This requires:

- Use of combined passenger-freight vehicles on low traffic roads
- Standardizing two-wheeler uses
- Safety for bicycle riders

Action 4. Ascertain and implement blanket speed limit for all categories of roads i.e., SRN, LRN, Urban Roads.

The blanket speed limits dispel the need to erect frequent signs to limit/delimit allowable speed. It would then only be required when the blanket limits could be breached.

After setting speed limits and zones, its compliance would require engineering measures designed to reduce speeds, enforcement effort, and education and awareness campaigns targeting driver attitudes and behaviors.

The subsequent actions would be:

- Ordinance on speed zone declaration issued until the Bill on road safety is ratified
- Implementation of traffic calming measures to bring down the cruising speed to the prescribed speed limit.

Action 5. Provide safe and comfortable road crossings in urban areas for pedestrians.

Frequent zebra crossings in urban areas disturb the flow of traffic, while the old and

disabled are not able to use overhead crossing with steps. The solution could be pedestrian/ bicyclist actuated toucan signals at zebra crossings or ramped underpasses.

- Action 6. Declare vehicle-free zones (where deemed necessary) to improve safety of pedestrians and cyclists (as per MVTMA § 118).

Vehicle free zone are only possible when the transportation needs of the inhabitants within such zones are taken care of in an alternate way.

- Action 7. Explore mass passenger transport alternatives in Metro and Sub-metro cities.

For example, the now defunct trolley bus in the seventies had a fixed timetable, which was possible to maintain because no other vehicles were allowed to use the lanes it plied on. Similar provisions of dedicated lanes could help improve the efficiency of public transport service and promote mass transport systems in urban areas.

- Action 8. Develop infrastructure to minimize vehicular traffic in the city cores.

In a country without zoning restrictions, the declaration of the vehicle-free zone would only be successful when complimentary facility on parking, catering, shopping, and recreation are developed simultaneously.

Thus, the targets should be:

- Development of overhead/ underground parking lots near UNESCO heritage sites and its surroundings through PPP.
- Vehicle registration plate to get location identifier/ chip to discourage vehicles from outside to drive into the designated area.
- Develop bicycle lanes and bicycle parking areas in the city core and on the roads leading to it.

- Action 9. Undertake adequate study prior to awarding route permits for inter-province buses and make necessary arrangements to record routes in an electronic platform

The starting, ending and all the obligatory points in the awarded route need to be recorded in GIS.

- Action 10. Draft road traffic management bill addressing road safety-related issues.

Traffic management and road safety go hand-in-hand as measures supporting one compliments the other, and, mobility requirement depends on the type of economic activity, topography, population, and settlement pattern. Thus, instead of the Federal law, Provincial Law with details elaborated on the Municipal rules can better address the local issues such as:

- To relieve congestion in urban areas: initiate strategies including congestion pricing schemes, entry restriction based on the time of the day and type of vehicles, the minimum number of passengers in cars, maximum parking duration, and parking/ stopping spots for buses and taxis.
- Develop ride-sharing culture.
- Determine routes, frequency, normal/ extended operating hours, normal/ off-hour fare, and size of intra-province buses while ensuring sustainability and attractiveness of services.
- Registration and management of Non-motorized transport (NMT) as data are crucial to planning infrastructures and services.

- Action 11. Ensure accessibility of public vehicles to all road users including the physically challenged ones.

There are two aspects to it: (a) In line with SDG Goal 9.1 and 3.6, accessibility to road

network has to be increased to remotest settlements while minimizing road casualty; (b) In line with SDG Goal 11.2, safe transport has to be ensured for all road users, including the elderly and disabled. In order to address these:

- Develop a GIS-based national road accessibility model to find settlements still not connected through accessibility audit.
- Develop a GIS-based model on bus routes and frequency

Action 12. Strictly enforce the existing legal provisions without exceptions.

Until the laws are updated, rigorous enforcement of existing legal tools through additional support of multiple stakeholders should be a priority. For example, though attempted by the Traffic Police sporadically, stopping at non-designated locations reduce road capacity and increase conflict situations. Also, driving on centre of roadway on highway and encroaching on opposite lanes on city roads are the reason for head-on collision and carrying capacity reduction of roads. Similarly, the unauthorized accesses to the highways increases conflict points and reduces the cruising speed. Though the law allows to roundup stray animals and auction them, vehicle hitting stray animals getting into crashes while trying to save the animals is a big problem in Nepal. Thus efforts need to enforce the followings in particular:

- Allow vehicles to stop only at designated locations (as per MVTMR § 122, 125).
- Ensure driving only on the designated lane (as per MVTMR § 135).
- Prohibit unauthorized road works and opening of access (as per § 19 of PRA).
- Prohibit the straying of domestic animals on the road (as per MVTMR § 138).

Action 13. Create a Transport Management Cadre within civil services

Despite the specialized knowledge required in planning and managing transportation, most of the staff at DOTM and TMO are from Administrative Services and must follow a 2-year placement cycle.

Action 14. Bring professionals from different sectors together to foster a better understanding of road safety-related issues.

Lack of proper understanding of standard procedures, technical terms, capabilities, possibilities, and sector-relative constraints between inter-sectoral professionals hinders road safety collaborations

4.4.2. Area II: Safe Road Infrastructure

Looking at the way road network in Nepal has evolved: more as a necessity through gradual expansion rather than based on careful planning. This has resulted in a range of unsafe features such as high grade, sharp bends, bottlenecks, obstruction to visibility, unsegregated use of road space by different transport modes, and so on. As pointed by the Stockholm Declaration, it has become necessary to tackle the infrastructure related problems through a safe system approach.

More elaboration on the activities are as follows:

Action 1. Network-wide safety assessment of SRN, LRN, and URN

Nepal cannot afford patented iRAP style star rating system for all the roads. A simpler system more reliant on secondary data and which could be run every couple of years needs to be explored so that a basis to prioritize investment on road safety is established.

Alternatively, instead of carrying out safety assessments with iRAP, local experts can use ViDA free of cost for analysis while maximizing the use of secondary data collected for other purposes (e.g: traffic count for AADT, video for SDI).

Two targets are proposed to measure the achievement:

- Assessment of SRN
- Assessment of City Roads and LCN

Action 2. Nationwide rollout of web-based road crash database and dissemination of data to the deserving agencies.

The RAIMS piloted along Kathmandu-Birgunj corridor needs to be expanded to cover the country. Data, filtered to suit the intended use, needs to be availed to agencies to devise preventive measures and to evaluate the performance of implemented measures.

To make RAIMS datasets comprehensive, it should be updated with the HMIS database. As there could be many health facilities within a district, Traffic Police (the custodian of RAIMS) needs to be given non-editing access to HMIS.

The output indicators are:

- Assign responsibility to capture and upload data assigned to Traffic Police through the upcoming Road Safety Act (if not an amendment of the Police Act);
- Establish a data sharing modality on who can access which part of the data;
- Development of human and technical resources at Federal, Provincial and Local levels for data use.
- Amend Health Sector Masterplan to record hospital visit/ death of road crash victim into HMIS and periodic reconciliation between RAIMS and HMIS datasets.

Action 3. Creation of a pool of qualified Road Safety Auditors through training and certification.

With the older generation of road safety auditors gradually phasing out, a steady production of qualified auditors needs to be assured. The TOT on safety auditors should be a continuous process.

The target recommended is training and certification of at least 10 Road safety Auditors per year.

Action 4. Encourage local training establishments to run training modules to enhance the capacity of road safety-relevant institutions.

Sustainability considerations require that the auditors are produced at local institutions.

The envisaged target is the training calendars of DOR, DOLI, Police, and DOTM to include road safety to train staff at federal and provincial levels.

Action 5. Establish mandatory provision for conducting road safety audits and its implementation on all categories of roads during different phases such as Feasibility, DPR, Construction, Pre-Opening, and Operation stage.

Most GOB funded SRN Road projects lack RSA, while those involving RSA fail to incorporate recommendations due to budgetary limitations. Whereas in the externally funded project, RSA is done at the pre-opening stage when the fund is usually limited, and the project is under time-pressure to complete. Therefore, often the safety part is removed from the works contracts through change orders. On non-SRN roads, there is no provision for RSA.

Thus, the need for RSA should be mandated at different stages of road development and rectification of qualified findings through its inclusion in the Road Safety Bill.

Action 6. Pilot Intelligent Transport System with traffic actuated signals, remote monitoring of speed and traffic volume, remote controlling of traffic flow, SMS/email delivery of traffic violation tickets, and so on.

Traffic signal system with pre-programmed timings of the past cannot quickly respond to

traffic fluctuations. The efficient deployment of Traffic Police personnel requires central control.

Hence, all future installation of traffic and toucan signals to be a road user actuated and suitable be integrated into a central control.

- Action 7. All externally funded road improvement projects to be developed as model links by addressing all the 5-areas and evaluate performance for future replication.

Collection of baseline data, analyzing crashes, and evaluating safety intervention/improvements periodically (after a certain period e.g., 5 years) is necessary. Equipping the Traffic Police offices along the corridor should be a part of the road improvement projects.

And the corresponding targets are:

- Km of roads designed/ constructed with a safe system approach.
- Number of case studies on lessons learned published.

- Action 8. Develop wayside amenities, truck/ bus laybys, and refresh center for long route drivers.

Although the laws require that the drivers on long routes should take frequent breaks, this is not possible in the absence of parking facilities with proper resting places. Planned wayside amenities could also boost the local economy in addition to making the journeys safer.

Development of wayside amenities along National Highways made a part of road improvement projects. The amenities to be operated through PPP.

- Action 9. Acquiring and maintaining right-of-way beyond road edge for all categories of Roads.

Although land acquisition for road construction is expensive, provision of at least 2-3 m narrow strip beyond the road edges would considerably reduce the chances of road crashes through segregation and improved visibility.

- Action 10. Operation permit issued to goods vehicles should be based on road conditions, possible maximum axle load limit, vehicle characteristics, traffic mix, and transportation requirements.

Goods vehicles of suitable capacity and model for a road type should only be allowed.

The achievement will be verified through the publication of guidelines to issue operation permit to goods vehicles.

- Action 11. Ratification of 1968 Convention on Road Signs and Signals

This convention provides commonly agreed road signs and signals, road markings, and specifies the norms for designing and installing traffic lights as well as focuses on safe infrastructure, which eventually contribute to safer roads and mobility.

- Action 12. Introduce mandatory provisions of work-zone safety in all road projects.

The provisions as per the Occupational Health and Safety (OHS) Guidelines 2019 is applicable also in case of road works. To ensure its compliance:

- Ensure work zone safety (use of PPE, fencing, delineation, etc) a priority in all works (road works, laying of water/ sewer/ telecom/ electricity conduits, etc) by exercising § 19 of PRA, § 126 of MVTMA, and the Civil Code,. Work zone safety should be a paid item with specifications and monitoring defined.
- Make insurance of workers and the third party compulsory in road works contracts of all sizes, executed by any agency and in any geographic location.

- Action 13. Prioritize maintenance over the construction of new roads

Potholes and undulation of the road surface and unlike road roughness enhance crash

risks, damages vehicles, and causes fatigue to road users. This requires:

- Help to instill a concept to prioritize periodic maintenance of roads based on the traffic volume;
- Initiate systematic elimination of traffic bottlenecks as a part of road development package (caused by abruptly narrowed intersections, road sections, culverts, inadequate extra-widening at sharp curves, etc.).

Action 14. Update and develop design guidelines on safer roads

The existing RSA Manual based in the old 3-E concept of road safety needs to be updated following the prevalent five areas of road safety. While doing so, it is essential to match the devolution of power as per the new constitution, the achievement of SDG Goals, global trend, advancement in road construction, and situational analysis of road crashes in Nepal. In externally funded road projects, manuals developed for different country-contexts are being used. It creates more confusion for the drivers as well as the road authorities. The achievement of the action will be measured through verification of an updated Road Safety Audit Manual.

Considering the cross-drainage structures on the road networks have become crash blackspots and traffic bottlenecks, the existing Road Safety Note on Safety at Bridge needs to be revised and updated.

4.4.3. Area III: Vehicle Safety

Nepal does not manufacture or re-export motor vehicles. Nevertheless, the body of almost all the trucks, buses, and three-wheelers are built here on imported chassis. Thus, though we do not have direct control on tractive power or brake effectivity, however, on features influencing sturdiness, passenger restrains, quality control of helmets, driver fatigue, real-time information to the driver, and overloading, a lot could be done.

Not many crash reports point the cause of the crash to un-roadworthy vehicles. Still, vehicles in bad condition are seen plying on the road. Part of the problem is due to the non-availability of a single VFTC's in the country. Another part of the problem is in the law or rather loopholes therein: while commercial vehicles need to undergo tests at the time of yearly renewal of registration, the remaining vehicles may renew their registration (and accompanying test) every 5 years.

These and other pertinent issues are covered under this action area.

Action 1. Accede and adopt the "1958 UN Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts" defining the minimum requirements that automobiles must satisfy in order to be approved for sale or use.

Though Nepal neither produces nor exports motor vehicles, the accession will help to curb import of substandard spare parts, accessories and any alteration failing to match the vehicle's originally designed properties.

Action 2. Establish VFTC conforming to the 1997 Convention on Technical Inspection of Vehicles in all provinces with the capacities matching the legal test frequency for each type of vehicle within a year.

With the recent rise in the number of crashes due to mechanical failures and not a single VFTC in operation in the country, the establishment of VFTC for objective roadworthiness assessment of vehicles is overdue.

The measurable targets should be:

- Establish a VFTC in each of the 7 provinces under the PPP model.
- Accede the 1997 Convention on Technical Inspection of Vehicles and incorporate the

provisions in VTMR.

- Action 3. Develop a national standard for vehicle accessories such as brake, tire, and seatbelt in conformity to the 1958 Agreement on Vehicle Regulations.

With a few local entrepreneurs starting to manufacture motor vehicle accessories, and substandard imported accessories being sold unchecked, the corresponding standards need to be set.

That is:

National standard for motorcycle helmet as well as seats, seatbelts, tires, and brake lining to be set.

- Action 4. Control overloading of freight trucks through the installation of weighing stations at border crossing points and along major trade corridors.

Though policies against overloading have been drafted by DOR and DOTM, overloading of trucks and resulting crashes cannot be minimized unless suspected trucks are forced to drive over weighing bridges. As it is difficult to unload some cargo (e.g: fly ash) from across the border once they get into Nepal, the axle load needs to be checked at the border crossing points as well.

The suggested indicators are:

- Establish or operate under PPP model a weighbridge in each 50km of CRN roads.
- Establish a national database linking weighbridges at border crossing points and on highways

- Action 5. Establish a system to encourage public vehicle operators to maintain a better safety record.

Very important but difficult to verify unless vehicle registration data is in electronic format and is accessible whenever action against a goods or passenger vehicle has to be taken.

Thus, the best approach would be:

Exemption of a certain percent of vehicle renewal fee to transport operators and license renewal fee to commercial vehicle drivers

- Action 6. Establish a centralized vehicle database system integrating vehicle registration, periodic inspections, and maintenance.

A centralized vehicle database to monitor their roadworthiness is essential for police works as well as the private sector to get interested in investing in VFTC, service centers, international driving test centers, and so on. It also helps in determining the right make/model for certain topography, and other commercially sensitive parameters.

And the indicators in this case are:

- Establish a provincial and national database to record initial registration, allowed use, inspection history, crash history, ownership history, and driver history in the beginning, and upgrade to include other histories in the future.
- Make the registration data fully accessible to all TMO and Traffic Police Offices as well as partially accessible to the general public.

- Action 7. Ratification of 1997 Agreement for the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles

The agreement provides a legal framework for the inspection of wheeled vehicles and the mutual recognition of inspection certificates for cross-border traffic.

- Action 8. Amend the Guidelines on vehicle fitness inspection and testing to include maintenance

workshops to be recognized by the vehicle manufacturer and qualification of authorized mechanics.

One of the conditions set by vehicle manufacturers and insurance companies is that the maintenance needs to be done at authorized workshops and by qualified personnel only. Thus, the existing guidelines need to be amended to comply with the 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles.

The appropriate goal would be:

Establishment of manufacturer accredited workshops at roadside amenities under the PPP model.

Action 9. Explore the possibilities to authorize the private sector for testing and issuing driving permits.

Alternative approach to clear backlog of tests and issuance of driving permits.

The requirement is for:

A study commissioned to explore the possibility and required legal framework.

Action 10. Strictly enforce the existing legal provisions on compulsory insurance against motor vehicle crashes as per MVTMA Chapter 8 (MVTMR Chapter 7)

The suspension of the compulsory insurance clause has been argued in the pretext of increased travel fare to cover insurance premiums. However, insurance is important to safeguard both operators and users from crash consequences.

Action 11. Strictly enforce the existing legal provisions for safer vehicles.

Until the laws are updated, rigorous enforcement of existing legal tools through additional support of all concerned stakeholders should be a priority.

- Ensure only vehicles meeting acceptable standards for safe driving are allowed to ply (as per VTMR § 17, 144).
- Ensure loading of vehicles does not exceed the manufacturer's specifications or as legally allowed limits as per VTMA § 102, 117, and VTMR § 15.
- Ensure vehicles carrying dangerous or oversized goods use conspicuous signs (as per VTMA § 127).
- Monitoring of bus/truck fabricators and service centers

Action 12. Real-time tracking of all vehicles plying on SRN Roads.

Monitoring of over-speeding and deviation from the allocated route is not possible unless the vehicles are fitted with GPS, RFID chips, or similar tracking devices that show their location in real-time. It would also assist in crash detection and rescue.

The targets are:

- Piloting of tracking device installation in commercial vehicles operating on highway sections and their real-time monitoring.
- Compulsory linking of a tracking device installed in commercial vehicles in the monitoring system.

4.4.4. Area IV: Safe Road Use

Safe mobility is a right of all road users. The concept is that all users, disregard of the mode of transport used, should be safe. Still, users of different modes require different considerations depending on their behavior, speed of travel, and level of exposure to other traffic. These issues are

addressed under this action area.

Action 1. Ratification of various convention, UN Resolution and guidelines

This agreement set out the minimum requirement of the examiner, detailed testing procedures i.e., theoretical, practical, skill testing, test sequence, duration, minimum standards of mental and physical fitness etc.

Nepal is considering to join the BBIN forum which would enable unhindered traffic movement between Bangladesh, Bhutan, India, and Nepal. Thus, a set of rules applicable to international traffic is of utmost importance as there exist considerable differences between the local laws in these countries. As all these are UN members, adopting the relevant UN conventions of traffic management and driver qualifications would smoothen the implementation of BBIN.

Thus, the following actions are suggested:

- Ratification of the 1975 Agreement on Minimum Requirements for Driving Permits
- Ratification of BBIN should be preceded by the 1968 Convention on Road Traffic
- Aligning the existing legal tools for compatibility with the ratified UN resolutions
- Amend MVTMR to accommodate a list of offenses, violation of which on incremental basis is made proportional to the duration for which a driving license would be suspended.

Action 2. Update the list of etiquette for the driver, conductor, and passengers in the Public Transport Code of Conduct 2067 based on 1968 Convention on Road Traffic. Also include the percentage of standees allowed in different passenger vehicles; essential carry-on tools and spares; accessibility for the elderly and disabled.

Many of the common etiquettes: to keep the doors closed, no loud music, helping the disabled and elderly, no force packing of passengers, not stopping on the middle of driving lanes, no unlisted stops, list of essential tools and spares to carry, the maximum size of passenger carry-on baggage, and so on needs to be added to rule out chances of crashes. Thus:

- Revise the existing Highway Code to address contemporary traffic management and road safety issues with pedestrians, cyclists, motorcyclists, and drivers of commercial vehicle

Action 3. Conduct nationwide road-safety awareness campaigns.

The road safety awareness campaigns in schools being conducted by Traffic Police needs to be extended to marketplaces, city centers, and rural communities to improve safety awareness general public and across all age groups. The Police need to be provided with necessary support (financial, technical, administrative, etc.) by other agencies.

For effective nationwide safety campaigns:

- On an annual basis, conduct at least one program per school and ensure one program is carried out by each school in each local bodies.
- Each year Provincial RSCs should come up with a list of road safety themes, based on the road crash/casualty pattern.

Action 4. Accommodate road safety in the next revision of formal and informal education curricula, teachers' guide, and standard reference material.

Although some of the textbooks used in private schools cover few components on road safety, its inclusion in the school standard curriculum with age-appropriate contents and scope could help induce safe road-use behavior from a young age. In the formative years, a chapter on road safety could be introduced in the text book for each level in school

through amendments in:

- Child Development Center Curriculum.
- Outline for School Level Curriculum 2076.
- Outline for Local Level Curriculum Development and Implementation Guidelines 2076.
- Curriculum and Text Material Development Guidelines 2073.
- Curriculum for Gumba, Madarsha, Gurukul, Mudhum and Intellectually Disabled.

Action 5. Promote School Zone Safety Program by law.

Despite verbal concerns, negligent progress has been made to make roads adjacent to schools safe for children. If made a part of the Road Safety Bill, the application will be uniform throughout the country.

The action has 2 targets:

- Legal compulsion to declare safe school zone to be a part of the Road Safety Bill.
- Publication of a technical note on school zone safety detailing on length of the section, required infrastructure, and enforcement efforts.

Action 6. Development of model traffic theme-parks including, bicycle lanes to educate school children on road safety and traffic management.

Schools and parents are always in lookout for places to take their children to. A tiny traffic theme park at Bhrikut Mandap has been receiving considerable number of visits each year.

The target is:

- Establishment of a model traffic theme-park including, bicycle lanes in each of the provinces through PPP.

Action 7. Prepare a plan for observing National Road Safety Day and Road Safety Week.

Considering the number of road users to be addressed, a week-long campaign might be required for Metro/ Sub-metro municipalities, whereas, only a day-long program could be afforded in rural municipalities.

The expected output is:

- A road-safety week per year in all metro/ sub-metros; a road safety day in all rural municipalities per year.

Action 8. Develop and implement a driver training module focusing on defensive and safe driving.

A comprehensive driving curriculum involving standard theoretical contents and practical training in real driving situations is needed to be adopted by all the driving training centers to better prepare new learner drivers for driving safely.

- Develop and implement traffic safety training module as a part of the driving test curriculum.

Action 9. Conduct a TOT program for all trainers and mechanics of the driving training school/ centers.

The TOT program could provide participants with the skills and knowledge to effectively plan, deliver and train others on safe and efficient operation of different types of vehicles in different contexts and risk environments.

Action 10. Develop and implement standard procedure while issuing a driving license in conformity to the 1975 Agreement on Minimum Requirements for Driving Permits.

The requirement of the examiner, theoretical part of the test, practical test, skill sets required, test sequence, duration, minimum standards of mental and physical fitness as specified by the UN convention could be adopted to attain uniformity with international practices. In addition to the issuance of driving permits based on vehicle categories (e.g., motorcycle, car, bus, etc.), purpose-based (e.g., personal use, city taxi, long route commercial buses, trucks, etc.) categories could also be explored and develop separate test procedures considering differences in crash risks and hazards between occupational and non-occupational drivers.

These could be achieved through:

- Uniform test parameters and procedure throughout the country
- Further categorization of driving permits based on the purpose of driving.

Action 11. Provision for a compulsory refresher course on traffic management and road safety during the renewal of the driving license.

The driving permits are renewed every 5 years. Numerous changes relevant to road safety and traffic management might have taken place over this period. A refresher course could help drivers understand new and existing traffic laws, and improve confidence and driving skills. With the curriculum developed, driving training centers could run such a course.

The relevant actions for these are:

- Make amendments in MVTMR for compulsory refresher training for all drivers at the time of driving license renewal
- Develop and maintain an electronic database of drivers with event history including traffic violations committed, courses attended, etc. accessible at every Traffic Police office.

Action 12. Provision for compulsory participation in upgrading training for drivers i.e., from motorcycle to car, car to heavy vehicle, conductor to bus/truck, heavy equipment to motorcycle/car, etc. as well as from one purpose to another (private to the professional driver).

The mechanical properties, carrying capacity, maneuverability, and blind spots vary for different types of vehicles, adding to the complexity in driving behaviors and knowledge. Thus, each change/addition of a vehicle type should require vehicle type-specific theory classes and tests.

- Make amendments in MVTMR to require training participation for each change/addition of vehicle type in driving license while renewing driving license

Action 13. Introduce incentives for commercial drivers/operators having crash-free records for a year.

Provision of incentives (financial, concessions of taxes, etc.) for drivers/operators can help encourage safe driving behaviors. However, the selection criteria need to be objective and transparent.

Action 14. Strengthened traffic monitoring through increased patrolling and remotely through CCTV along SRN, PRN and local roads.

Due to difficulty in managing travel logistics, the patrolling at present is limited to nearby urban areas along good roads. This needs to give way to:

- Each Traffic Police unit to develop /implement a patrolling plan.
- Traffic monitoring at known road crash blackspots remotely through CCTV

Action 15. Enhance enforcement capacity of Traffic Police.

Although the basic office and living requirements of Traffic Police are covered by the

Federal Government, the resources required for effective traffic management and road safety are tightly stretched within the organization. Thus equipment and tools for the Police could be bundled into the cost of an adjacent major new road development project as the police tasks increase many folds with the increment in the road network. The cost of minor equipment required to assist during road closures could be bundled into the cost of adjacent major new road development projects.

In mountainous areas, a heavy crane needs to be available within a couple of hours distance to pull out buses/trucks falling into the valleys. Without speed measuring equipment, enforcement of speed limits will remain subjective. However, provision of a GPS vehicle tracking system covering the road link would help avoid the need for separate speed measuring setup and additional costs associated with it. Computer setup and internet connectivity are pre-requisites for the planned countrywide rollout of RAIMS and GPS vehicle tracking.

- All Traffic Police below District Traffic Police Office to be provided with a minimum set equipment and tools.
- Each Traffic Police along SRN to get simple equipment such as winches, metal cutter, and chain-saw, to disentangle crashed vehicles, and remove obstructions (fallen tree/boulders)
- Traffic Police Offices at 100 km interval along SRN to get a 25MT crane
- Traffic Police offices need to be equipped with speed measuring apparatus (fixed or mobile), next to road links where speeding is likely
- Equipping all Traffic Police offices with basic computer setup and internet connectivity

Action 16. Scope out the responsibility of Traffic Police to Municipal Police for regulating vendors from pedestrian walkways.

Scoping out the responsibility to municipal police relieves traffic police of additional work burden and can effectively focus on other traffic management issues.

Action 17. Strictly enforce the following existing legal provisions for safer road users.

Rigorous enforcement of existing legal tools through additional support of multiple stakeholders can help trigger safe road use behavior among road users.

Action 18. Ensure that vehicular traffic honor pedestrians' right on zebra crossings when being used (as per MVTMR § 132).

There is no point to paint zebra markings if vehicles do not stop at it when pedestrians cross the road. Jaywalking prevents the vehicular traffic to maintain uniform cruising speed and increases the risk of road crashes. Reciprocally, pedestrians need to honor the right of vehicles on driving lanes (as per MVTMR § 136, 137). Thus:

- Ensure nationwide erection of speed control sign and publish notice on speed zones
- Ensure the compulsory use of seat-belt by front-seat car passengers and the use of helmets by all motorcycle riders (as per MVTMA § 130).
- Ensure the compulsory use of seat-belt by front-seat car passengers and the use of helmets by all motorcycle riders (as per MVTMA § 130).

Action 19. Ensure availability of trained workforce for effective monitoring and implementation of the prevailing provision of VTMR § 140, 157, 158. To avoid this,

- Appointment/ deployment of Mobile Transport Inspectors

Action 20. Real-time information on traffic condition and safety issues for the drivers through FM, mobile app, and SMS alerts at the provincial level.

The single FM broadcast from Kathmandu fails to cover other parts of the country while the traffic updates broadcasted for the valley are not in real-time. Consequently, drivers are not tuning to it and thereby sometimes missing important announcements (e.g., road closure).

- All Provincial Traffic Police Office to establish and maintain their FM stations or feed information to a local station.

4.4.5. Area V: Post-Crash Response

The scope of the Area is to 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.

In the post-crash scenario, early response is the essence: the shorter the response time, the better. For this, communication among the crash victims, primary responders, ambulance administrators, and trauma hospitals should be facilitated with priority.

The actions in detail are:

Action 1. Establish a Road Safety Unit at the Department of Health Services

A focal point is required at Department level for (a) coordination with National RSC, Provincial RSC, WHO, and other NGOs; (b) to ensure the road safety-related activities get due attention in the department's yearly and periodic plans; (c) to ensure the department's responsibilities on road safety are fulfilled.

For this, the indicator of progress is:

A Road safety Unit established at DOHS.

Action 2. Introduce a nation-wide toll-free number and Unified Command Centers to address severe road crashes.

- Pilot an Unified Command Centre

The UFC contactable through a toll-free number, will mobilize: (a) a rapid response team with crane and metal cutters for fast evacuation of crash victims from wrecked vehicles; (b) appropriately manned and equipped ambulance; (c) Traffic Police personnel to cordon the site and to divert traffic.

- Establishment of: (a) Pilot UFC with toll-free number; (b) Protocol for communication and mobilization of Rapid Responder Team, ambulances, and traffic police.

- Rollout Unified Command Center in Provinces

The UFC concept is to be rolled out in each province.

- In each province, establishment of: (a) UFC with toll-free number; (b) Protocol for communication and mobilization of Rapid Responder Team, ambulances, and traffic police.

Action 3. Establish an Ambulance Dispatch Center at each District Hospital.

The action is sub-divided into the following five complementary actions with clarifications and indicators:

- Empowerment of the Ambulance Dispatch Center.

The need to contact each ambulance service provider at their private number, negotiate fares, and the health facility to be taken, results in considerable delays in transporting and handover of crash victims to medical staff/facilities. The center should be empowered to function as the UFC until it is established and administer ambulances

under diverse ownerships.

- An ambulance dispatch center taking calls 24x7, should be established at all District Hospitals to inform the ambulance stationed nearest to the requested location to attend and get the patient to the nearest suitable facility.

- Establish a SOP for medical staff in the ambulance and the health facility receiving the patient.

The Ambulance Service Operation Guidelines 2073 lists the equipment and professionals for class A and B ambulance as well as the code of conduct for the ambulance driver. However, the protocol for medical staff in the ambulance and the health facility receiving the patient remain undefined.

- National protocol established

- Avail a mobile app to the general public showing the location of nearby ambulance dispatch centers, their contact details, and health facilities nearby.

Such a mobile app may come very handy for road crash victims, drivers, conductors, and local rescuers

- Development and launching of ambulance tracking app

- Facilitation and monitoring of service provided by ambulance owners to ensure ambulances with the necessary equipment, medical supplies, and qualified personnel.

The District Ambulance Service Operation Committees need to be active in monitoring and facilitating them.

- Develop a monitoring and rewarding framework to monitor the number, frequency, and quality of the service every year.

- Start a training for ambulance drivers

Not all drivers can qualify to drive ambulances.

- Develop a short course covering the protocol to be followed by ambulance drivers.

Action 4. Establish guidelines for air ambulance service through scheduled flights as well as emergency flights.

The National Ambulance Operation Coordination Committee is yet to devise the necessary guidelines.

The measure for the output is:

Development of SOP for the rescue of road crash victims.

Action 5. Capacity building on trauma-care service

The action is sub-divided into the following three complementary actions with clarifications and indicators:

- Provide trauma-care training to medical personnel in primary, secondary, and tertiary health facilities.

WHO (South East Asia Regional Office) has prepared a curriculum including trauma care for all medical students. This needs to be made a part of the standard medical curriculum.

- Trauma care made a part of certificate and bachelor level education in clinical medicine and nursing.

- Start a course on Emergency Medical Technician

The ambulance drivers, paramedics travelling in the ambulances, and the health workers handling the patients at the receiving health facilities need special skills to

make the best use of the Golden Hour.

- Start training for (a) Category A and B Ambulance drivers, (b) Paramedics travelling in the ambulances, and the (c) Nurses handling trauma cases at health facilities.

- Establish a Trauma registry.

The present Health Management Information System (HMIS) does not record details on trauma cases.

- Trauma Registry to record details from identification of trauma cases to rehabilitation of victims established

Action 6. Establish a network of trauma care facilities

The action is sub-divided into the following three complementary actions with clarifications and indicators:

- Ensure the primary function of the Level 1 Trauma Centre in Kathmandu remains care of trauma patients only.

The present practice of treating all type of patients may result in insufficient capacity in case of a real trauma event.

- Admission criteria to be developed and followed.

- Develop Provincial Hospitals to Level II and Municipal Hospitals to Level III trauma care centers.

As stated in the Approach Paper for the 15th Plan.

- Select hospitals such that a trauma care facility is available at 40 km in the hills and 60 km in the plains (or at 1 hour driving distance).

- Identify hospitals for the establishment of trauma and rehabilitation units along major highways

National Health Sector Implementation plan 2021 has identified the need for trauma care centers. The 14th periodic plan has earmarked resources for seven trauma centers.

- Select hospitals near major transportation routes to be equipped for trauma care.

Action 7. Train personnel from likely first responder agencies (e.g., Police, Fire Brigade, etc.) in injury emergency response.

Many road crash victims die as they do not reach appropriate health facilities and receive medical treatment within the golden hour. This could be corrected if the likely first responders could be trained to administer first-aid.

Thus,

National Health Policy-2076 to be amended to include this.

Action 8. Pass a law to shield Good Samaritans against prosecution for rendering aid to road crash victims.

In the absence of legal protection, people hesitate to get involved in responding to road crashes.

Hence it is required that:

- Promulgate a different law or strengthen existing provisions in the Civil Code to protect Good Samaritans.

Action 9. Encourage and sensitize public in becoming good samaritans

People might likely refrain from offering assistance to crash victims if they are unaware of

their rights under the law and incentivized.

- Encourage to volunteer as Good Samaritans by felicitating responders to road crash victims.

Action 10. Improve the reception of the present toll-free telephone number to call Traffic Police and launch a mobile app to ask for help or to report road crashes.

The action is sub-divided into the following two complementary actions with clarifications and indicators:

- Improve the reception of the present toll-free telephone number to call Traffic Police and launch a mobile app to ask for help or to report road crashes.

Communication with Traffic Police needs to be enhanced so that reporting and seeking for assistance become efficient.

- Toll-free number is made receivable at District Traffic Police Office; the app offered by the Metropolitan Traffic Police Division improved for use in all provinces.

- Real-time information on traffic conditions and safety issues for the drivers through FM, mobile app, and mass SMS alerts at the provincial level.

The single FM broadcast from Kathmandu does not cover the entire country, while the updates broadcasted for the valley are not in real-time. Consequently, drivers are not tuning to it and thereby sometimes missing important announcements (e.g: road closure).

- All Provincial Traffic Police Office to establish and maintain their own FM stations or feed information to a local station.

Action 11. Amend VTMA to facilitate better availability of first-aid to road crash victims.

In order to comply with the UN conventions, first-aid kits should be always available. The availability of the kit could be checked during the vehicle registration renewal.

The following achievements must be ensured:

- In elaboration to § 145, all motor vehicles need to carry first-aid supplies.
- In elaboration to § 4, driving license applicants must participate in training on first-aid.

Action 12. Additional effort to enforce the existing legal provisions on compulsory insurance against motor vehicle crashes as per VTMA Chapter 8 (VTMR Chapter 7).

No more suspension of the compulsory insurance clause in the pretext of increased travel fare to cover insurance premiums.

The indicators for achievement are:

- Minimum insurance threshold specified and registration/ renewal only upon proof of insurance.
- Access the prerequisites for unlimited liability, or at least comparable to the coverage in India, insurance for road crash victims.

Action 13. Update National Road Safety Action Plan for covering the period 2021 to 2030

The earlier plan prepared in 2013 has already expired in 2020. Also, the structure of the state has changed after the promulgation of the new constitution in 2015. Thus, the existing plan needs to be updated considering the new target established by the United Nation for the period 2021 to 2030 and changed federal structure of the country.

Action 14. Develop and periodically update plan to invest in road safety at Federal, Provincial, and Municipal levels.

An investment plan supporting the activities planned in the RSAP and a budget prioritization framework would help achieve the goal of reducing the number and severity of road crashes.

The corresponding actions are:

- Establishment of a separate and dedicated unit on road safety within each agency working on road safety.
- Allocation of an adequate budget by all the concerned agencies for road safety activities
- Establishment mechanisms for efficient and strategic resource allocation across safety programs
- Sustainable funding mechanisms will be established by law for carrying out road safety activities.
- Necessary policy/guidelines will be developed and implemented to ensure private funding on road safety through the PPP model.
- Identifying and implementing innovative funding mechanisms, such as central matching funds for road safety interventions at the provincial levels.

Action 15. Facilitate for the establishment of Centre of Excellence on road safety at Federal and Provincial levels for developing sustainable institutional base on road safety expertise in the country.

The main purpose of the center is to support Government agencies (Federal, Provincial, and Local Level) and other stakeholders for the benefit of reducing road trauma in the nation with: designing training materials, conducting case studies, preparing and publishing best practice book, conducting action research, developing different types of standard and guideline and linking with the international research community.

- Number of Centers established at Federal and Provincial levels
- Number of training/case studies/research activities conducted by those centers.
- Promote relevant research-based publications, e.g.,:
 - crash reduction factors in Nepalese roads;
 - Cost of road crashes;
 - vehicle-kilometer survey;
 - Update design standards for SRN/ non-SRN roads based on the global safety practices

Action 16. Establish a system to investigate severe road crashes

Usually, road crashes are a result of a number of factors which the Traffic Police cannot comprehend. The country needs to develop a scientific and affordable methodology for the investigation of crashes.

The relevant actions are:

- Multi-casualty road crashes are investigated by a multi-disciplinary team of experts.
- A list of expertise for the investigation, SOP and scope of investigation, along with logistical support required by the investigators to be developed through piloting of possible alternatives.

5. MONITORING FRAMEWORK

To facilitate monitoring of the level of implementation of National RSAP and the resulting outcome, the following parameters have been defined. Course correction action should follow if necessary.

- **Activity:** The activities required to be made in order to achieve the national goal of lowering the road fatalities by 50% within 2030
 - **Action:** The actions to be taken
 - **Clarification:** Clarification and further detailing on the actions to be taken
- **Governance level:** The federal, provincial, and local governments have authorities defined by the constitution. Their responsibility towards lowering the road deaths needs to be in line with the corresponding authority.
 - **Federal:** Federal ministries and other federal-level government agencies
 - **Provincial:** Provincial ministries and other provincial-level government agencies
 - **Local:** Metropolitan municipality, Sub-metropolitan municipalities, Urban municipalities, and Rural municipalities as well as municipal level agencies.
- **Execution period:** The actions are required to be executed during a certain time period within the next decade. Execution period for some of these actions are:
 - **15thPlan:** The actions to be executed within the 15th Periodic Plan period (from the year 2021 to 2025)
 - **16thPlan:** The actions to be executed within the 16th Periodic Plan period (from the year 2020 to 2025)
- **Responsible agency:** The agencies which among all stakeholder agencies are more relevant to facilitate the implementation of the action
 - **Leading:** The agency required to take the lead in the implementation of the action
 - **Supporting:** The agencies which are best suited to support the lead agency
- **Target Setting:** Framing of the target for each action
 - **Performance Target/ Indicators:** The measure of achievement of the target set
 - **Baseline:** The situation as it is in the year 2010
- **Monitoring framework:** Framing of the monitoring mechanism
 - **Responsibility:** The agency responsible for monitoring against the achievement of the targets
 - **Frequency:** Frequency of monitoring
 - **Data Source:** The most appropriate source of data identified in 2010 for monitoring. This may change with organization setting and legislation.

ANNEXES

ANNEX 1: Evaluation of National RSAP 2013/20.**Pillar 1: Road Safety Management**

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
1.1. Revive the existing National Road Safety Council with necessary acts, higher authority, and resume work.	NRSC revived through a Formation and Operation Guidelines	Strengthening for authority and resources
1.2. Develop the national roadsafety action plan.	National RSAP 2013/20 formulated	National RSAP 2021/30 to be developed
1.3. Conduct training on roadsafety & traffic rules.	Limited to the focal area of the agencies	<ul style="list-style-type: none"> ▪ Traffic Police: road crash data management, ▪ Medical personnel: trauma-care training, ▪ Drivers/ mechanic: first-aid, traffic safety, legal framework, ▪ Road Safety Auditors: induction ▪ Engineering students: road safety ▪ Staff at stakeholder agencies: road safety
1.4. Develop and implement a pedestrianization planning guideline and regulation.	Preliminary discussions within stakeholder agencies	Development of vehicle-free zones and associated infrastructure
1.5. Review and update vehicle insurance policy regarding vehicle passengers, crew, transport laborer	Preliminary discussions within stakeholder agencies	No suspension of the existing legal provision
1.6. Identify amendments required in VTMA 1993, VTMR 1994, LSGA 1999 and LSGR 1999 to accommodate: <ul style="list-style-type: none"> ▪ Harmonization with the UN conventions and international agreements on roadsafety ▪ Harmonize with pedestrian regulation ▪ Appropriate insurance cover and policy as per the previous 	<ul style="list-style-type: none"> ▪ Amendments proposed by DOTM on VTMA still to be ratified. ▪ The traffic fine rates have been increased through amendment of VTMR 	<ul style="list-style-type: none"> ▪ Ratification of UN legal tools and amendment of local laws accordingly ▪ Insurance to be made compulsory for all vehicles as per the existing laws ▪ Capacity development of Traffic Police through training, budget, equipment, and authority

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
<p>review</p> <ul style="list-style-type: none"> Expanded power delegated to Traffic Police Increase traffic fine rates. 		
1.7. Conduct workshops on required amendments in VTMA 1993, VTMR 1994, LSGA 1999, and LSGR 1999 to promote roadsafety for all users.	NRSS, in support of UNSCAP and RBN, had organized workshops in the past.	<ul style="list-style-type: none"> Development of public awareness material and their broadcasting Road Safety Weeks in provinces Road Safety Education in schools
1.8. Amend VTMR 1994 and LSGR 1999 to harmonize with UN/International conventions, pedestrian regulation, prescribed third-party insurance cover, and the previous workshop recommendations.	NRSS, in support of UNSCAP and RBN, had organized workshops in the past.	Covered under 1.6
1.9. Establish sound coordination mechanisms on managing road-safety including: <ul style="list-style-type: none"> Demarcate clear roles of the stakeholders; Regular information sharing; Integrated planning; Ensuring transport management committees at the district and central levels 	The Nepal Road safety Council Formation and Operation Guidelines provide a cooperation framework.	Until the much-awaited Road Safety Act comes into existence, the provisions in the Guidelines are to be exploited for coordination.
1.10. Develop a national roadsafety strategy incorporating the following measures and process for the government endorsement at the cabinet or ministerial level: <ul style="list-style-type: none"> Confirm long-term investment priorities Promote ISO traffic safety management standard - ISO39001 Establish an improved system for data collection for 	No progress	<ul style="list-style-type: none"> Investment priorities through PPP model and GON direct investment to be defined Use of ISO39001 is not practical in the Nepalese context, due to small manufacturing bases and GON agencies cannot bear the cost of maintaining the license. Instead, the adoption of UN legal tools could be a better option to be a part of the global community

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
baseline and monitoring <ul style="list-style-type: none"> Establish realistic and long-term national targets for improving road-safety, e.g: 2015: 35% RTA fatality reduction; 2020: 50% RTA fatality reductions. 		<ul style="list-style-type: none"> RAIMS to be promoted for road crash data management Instead of arbitrary goals on road fatality reduction, adhere to the global goal set by the Stockholm conference
1.11. Investigate the following funding means for the road-safety activities: <ul style="list-style-type: none"> Adopt FYIRR for funding decision Assign 10% of the road infrastructure cost Use the Road Board funds Adopt PPP schemes with: NADA, FNNT, Insurance agencies 	RBN has been sponsoring road safety workshops	<ul style="list-style-type: none"> Prepare a basis for IRR and cost/benefit calculation based on the number of crashes prevented, to advocate for a sustainable funding Policy decision to assign 10% of the road development cost on safety RBN funding for road crash preventive measures PPP modality for the development of road safety infrastructure.
1.12. Develop a mechanism to measure the outcomes of various interventions.	Sporadic small-scale activities by various agencies	Road crash probability analysis to justify funding for safety interventions
1.13. Improve the data collection and analysis of road traffic crashes	A new RAIMS started on a pilot basis	Country-wide extension of the RAIMS
1.14. Conduct research on countermeasures on all roads.	Sporadic small-scale activities by various agencies	A modality to be developed to conduct researches, e.g: through Centre of Excellence and group of experts
1.15. Conduct research on pedestrian safety	Sporadic small-scale activities by various agencies	Covered under 1.14
1.16. Conduct a pilot project to evaluate traffic calming measures in Nepal	Installed in Narayanghat-Mugling road with encouraging results	The lesson learned from Narayanghat-Mugling road to be used in other roads
1.17. Training to stakeholders.	Sporadic small-scale activities by various agencies	Covered under 1.3
1.18. Training for traffic enforcement Institutional strengthen DOR,	Sporadic small-scale activities by	Covered under 1.3

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
RTU	various agencies	
1.19. Gradually appoint transport inspectors at all Transport Management Offices.	No progress	To be initiated

Pillar 2: Safer Roads and Mobility

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
2.1. Pilot the road-safety audits (construction to opening stage) in the DOR RSDP roads.	Completed	As per international practice, Road Safety Audits at Feasibility/ DPR/ Construction/ Pre-opening stages to be mandatory for both strategic and non-strategic roads developed under local or external funding
2.2. Enforce roadsafety audits in all the donor-aided DOR projects	Normally a part of Detailed Design TOR in ADB and WB projects, no pre-opening audits	Covered under 2.1.
2.3. Introduce mandatory procedures (compliance, exemption) of safety audit recommendations for strategic roads.	No progress as the Road Safety Audit procedure has not revised	The Road Safety Audit manual to be revised should specify procedures/ parameters for both strategic and non-strategic roads
2.4. Implement roadsafety audits in all the DOR projects.	Many audits are reported to be conducted but no record on the correction of findings carried out (if any)	Road Safety Audit Report and a record of corrective measures applied should be a part of the central DOR repository
2.5. Develop a safety audit manual for non-strategic roads.	At discussion phase within DOLI	The next version of RSA manual should cover links in Local Core Road Network (constituted by Urban Roads and priority local roads)
2.6. Introduce procedures (compliance, exemption) for safety audit recommendations at non-strategic roads.	No progress	Covered by 2.3
2.7. Conduct roadsafety audits in non-strategic roads.	No progress	Covered by 2.1

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
2.8. Update existing safety manuals; develop guidelines on saferoad design and sustainable transport infrastructures for: <ul style="list-style-type: none"> Urban communities Rural communities Vulnerable road-users 	No progress	To be initiated
2.9. Introduce roadsafety impact assessment and controls in all land developments	No progress	Guidelines for land development to include the Safe System Approach
2.10. Conduct blackspot analysis on strategic roads.	Stopped after 2000	To be resumed based on output from RAIMS database
2.11. Construct countermeasures at the blackspots and hazard locations of the strategic roads.	Small-scale activities on highways by Division Road Offices	A system for periodic network level safety assessment to be established
2.12. Install the following mass action countermeasures at blackspots, where appropriate, along the strategic roads: <ul style="list-style-type: none"> Safetybarriers, Steel guard-rails, Roadhumps, Rumble strips, Signals, New Jersey barriers 	Small-scale activities on highways by Division Road Offices	Covered under 2.1 and 2.11.
2.13. Install following mass action countermeasures at appropriate blackspots and hazardous locations of the strategic roads: <ul style="list-style-type: none"> Footpaths, Signs, Reflective road-markings, 	Small-scale activities on highways by Division Road Offices	Covered under 2.1 and 2.11.

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
<ul style="list-style-type: none"> Bus-laybys, Junction modifications including roundabouts, and handrails. 		
2.14. Prioritize providing adequate delineation (signs, road markings, reflective dividers) on all roads	Only road markings have become a standard delineation feature	Covered under 2.1 and 2.11.
2.15. Identify sustainable operation for signals (solar power) and start their uninterrupted operation.	Signals were installed at five intersections in Kathmandu	Covered under 2.1
2.16. Construct pedestrian crossings (overheads, underpasses)	Footbridges constructed along Kalanki-Koteshwar section of the ring road	Covered under 2.1
2.17. Install pelican signal-crossing at the recommended locations in: <ul style="list-style-type: none"> Kathmandu, Pokhara, Nepalgunj, Biratnagar. 	A few installed in Kathmandu have long been damaged	Toucan signals to be installed on urban roads and highways based on RSA.
2.18. Strictly enforce DOR, DOLIDAR, municipalities and local bodies to: <ul style="list-style-type: none"> Eliminate high-risk roads Maintain roads pot-free Control encroachments – streets, footpaths Adopt safe-design in hill-roads (e.g. More overtaking zones, setback distance, etc.) Develop toll-plazas at the national highways Control stray livestock and indiscriminate roadside 	Though outdated, standards are available but not followed. Updating of Nepal Roads standard in 2015 has improved technical provisions.	<ul style="list-style-type: none"> Design standards for both strategic and non-strategic roads to be revised with safety in focus A system of economic-return based prioritizing method for periodic maintenance to be developed Judicial use of Municipal Police to control encroachment of road and footpaths for non-intended activities

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
dumping of construction materials		
2.19. Introduce mandatory provisions for work-zone safety planning in the construction contracts (from construction until defect liability period) on all roads.	Not mandatory: depends on the discretion of Design/ Supervision Consultants	With the OHS Guidelines published by the Department of Labor and Occupational Safety, the Public Procurement Monitoring Office needs to be encouraged to update the General Condition of Contract clauses in SBD templates incorporating the provisions in the guidelines.
2.20. Make road authorities legally responsible for reporting annually their progress, findings, and remedial works performed for road-safety.	The new Civil Code has the provision to make public servants liable in case of negligence	Training to DOR, DOLI, and DOTM staff for improved understanding of their legal obligations
2.21. Establish roadsafety units in DOLIDAR, and valley municipalities.	Safety unit in DOLI at the central level established. No such units in municipalities.	The Bill on road safety to be modified for DOLI to be a member of the National RSC and each municipality to get a road safety cell.
2.22. Skill Training in safe roads: <ul style="list-style-type: none"> Safe-road infrastructures: <ul style="list-style-type: none"> Int'l 1 month -RTU chief. Regional 10 days –RTU mid-level & other stakeholders. Auditor certification, regional 7 days: <ul style="list-style-type: none"> DOR: 10 number DOLIDAR: 10 number Other stakeholders: 5 number 	Road Safety Auditor certification to 10 engineers by ARRB	For sustainability, training on road safety to be encouraged to be conducted by local engineering colleges and Centre of Excellences
2.23. Prioritize roadmaintenance based on traffic volume.	Traffic volume and strategic importance both used as selection criteria of road links	Being undertaken by WB funded SRCTIP
2.24. Develop the following pedestrianized zones Saturday Market	Unplanned markets	The municipalities to be encouraged to establish and take

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
Zone (10 am – 6 pm) at: <ul style="list-style-type: none"> Asan- Bhotahitti- Indrachowk area, Thamel- Sorrakhuttey area. 		ownership of weekly markets and pedestrian zones
2.25. Relocate electrical and telephone poles obstructing mobility.	Not followed on newly widened roads	Utility authorities to be routinely asked for the relocation of hazardous on-road obstructions
2.26. Construct parking areas (passengers, trucks) and monitor.	No progress	Development of parking area itself is not a road safety but a traffic management issue

Pillar 3: Safer Vehicles

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
3.1. Develop and implement a safevehicle guideline through a task force including the following: <ul style="list-style-type: none"> Vehicle condition and loading capacity Minimum criteria for vehicle inspections tests Closed driver cabins – public vehicles Local body fabrication Color-code for school & public bus Enforce EURO 3 emission standard Max. standees permissible in bus Controlling duplicate spares Differently and elderly accessible vehicles Encourage hybrid vehicles. 	Completed by DOTM	Implementation to be pursued
3.2. Identify amendments required in VTMA and VTMR to	Proposal to amend VTMA/	Persistence to incorporate the identified provisions in the

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
incorporate the following: <ul style="list-style-type: none"> Harmonize with DOR Heavy Vehicle Management Policy 2007 Phasing out old vehicles Franchising vehicle inspection to private workshops Prohibit freight on bus and minibuses Comprehensive vehicle insurance Prohibit slow-moving vehicles on highways Heavy penalty for passengers travelling on vehicle roofs Safe-vehicle guideline Better route permit procedures aligned with safety provisions Improve insurance cover and introduce a universal health care concept. 	VTMR initiated	forthcoming amendments
3.3. Amend VTMR 1994 and VTMA 1993 as per the above review.	No progress	Covered under 3.2
3.4. Review the route permit procedures.	Following a review, DOTM has published Route Allocation Guidelines for public buses	<ul style="list-style-type: none"> Reallocation of bus routes as per the guidelines Properly recording of the routes in an electronic medium
3.5. Set up a central transport management committee under the MPPWTM Secretary to better monitor transport management overall.	No progress	Only a part of transport management is related to road safety
3.6. Incorporate and implement the following provisions in the proposed National Transport Policy 2011: <ul style="list-style-type: none"> Banning aging vehicles in the country Control road-access based on vehicle dimension 	No progress as the Nepal Transport Policy was published earlier than National RSAP 2013/20	To be included in the next revision of the policy document

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
<ul style="list-style-type: none"> ▪ DOR Heavy Vehicle Management Policy 2007 ▪ Scientific licensing and route permits ▪ Promoting eco-friendly vehicles ▪ New vehicle standards ▪ Operating a state-owned public transport service ▪ Improve the insurance cover to accommodate the increasing compensation demands. 		
3.7. Upgrade DOTM institutional capacity through: <ul style="list-style-type: none"> ▪ International training for staff ▪ Computerized database ▪ ICT networking ▪ Staff incentive policy ▪ Added TMOs and TMSCs. 	Established databases are: <ul style="list-style-type: none"> ▪ Vehicle registration ▪ Driving permits ▪ Road Crashes 	Further capacity-building activities to be initiated
3.8. Strictly enforce restrictions on vehicle modifications stipulated in VTMA, its amendment and guideline above.	<ul style="list-style-type: none"> ▪ Sporadic action by Traffic police ▪ Guidelines on vehicle body fabricators and repair workshops issued 	A single-door policy for registration of the facilities and their monitoring to be continued
3.9. Ensure all public vehicles are handicap accessible.	<ul style="list-style-type: none"> ▪ In a few routes in Kathmandu, the operators have been using low-floor buses ▪ Under ADB funded KSUTP, tactile tiles were laid on footpaths 	The activities should be continued in other urban areas
3.10. Ensure all the seat belts, anchorages, and standard safety	In new vehicles, the laws in the	Phasing out of old vehicles lacking the vehicle safety features

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
features in vehicles meet the crash test standard.	country of origin require such provisions	
3.11. Provide fiscal (e.g. reduced tax) and other incentives to promote safety features in vehicles.	No progress	Rather than reducing tax which might be seen as favoring certain make/model, felicitate drivers with crash-free records
3.12. Promote incentives to import vehicles with high safety features (electronic stability control, anti-lock braking, etc.) and discourage those with poor safety records.	No progress	Covered under 3.11
3.13. Introduce modern, scientific vehicle testing with strict enforcement.	No progress	Establish VFTC at all provinces using the PPP model
3.14. Improve inspections and enhance random checks on vehicle roadworthiness.	Sporadic action by Traffic police	On-road checks to be continued, however, periodic inspection at designated facilities should be a must
3.15. Enhance random loading checks (axles, passengers) of public vehicles to control overloading.	A few weigh bridges established by Truck owner's association, but the aim is not axle load control. Sporadic action by traffic police	To be continued
3.15. Franchise fitness tests at private auto-workshops and establish network.	No progress	Covered under 3.13
3.16. Encourage transport entrepreneurs to provide cash incentives to drivers with no accident record in the entire year.	Cash incentive schemes encouraging more trips	Out of scope of GON
3.17. Introduce embossed vehicle registration plates.	Stalled following a court order	To be resumed
3.18. Prohibit slow-moving vehicles along the highways.	No progress	Not practical on all highways. NMT lanes to be provided on the highways to be developed
3.19. Probe major accidents involving public vehicles for possible evidence of poor roadworthiness and establish mitigation measures.	SOP being formulated	To be initiated

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
3.20. Train mechanics and crews on vital maintenance of public vehicles (brakes, steering, clutch, tires, etc.)	No progress	Covered under 3.13.
3.21. Research on school-bus safety.	No progress	Could be made a topic for bachelor/masters-level thesis at the universities.

Pillar 4: Safer Road Users

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
4.1. Review, amend VTMR, VTMA to: <ul style="list-style-type: none"> Harmonize with global safe practices for commercial vehicles Impose stiff penalty on both the vehicle-owner and passenger for allowing to be travelling on vehicle-roof Improve driver license procedures to enhance safety. 	Sporadic action by Traffic Police	Covered under 3.2
4.2. Develop a comprehensive code-of-conduct for all roadusers (drivers, pedestrians, streetvendors).	1998 Highway Code not updated yet	The Highway Code to be updated
4.3. Survey the roadusers' attitudes towards roadsafety improvements.	No progress	To be conducted by Police and municipal FM stations
4.4. Conduct roadsafety awareness campaigns for school children & pedestrians	Sporadic action by Traffic Police and a few NGOs	The education program should entrust a certain agency through law.
4.5. Review/ develop posters and conduct poster campaigns on roadsafety awareness.	sporadic small-scale activities by number of agencies	The agency responsible for row 4.4 activity should be doing this as well
4.6. Update the existing textbooks on roadsafety for schools, publish and introduce in the school curriculum.	No action	To be initiated in the next National RSAP period
4.7. Publicize roadsafety through TV, radio, and print media.	Sporadic small-scale activities by	The agency responsible for Activity 4.4 should be doing this as

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
	several agencies	well
4.8. Introduce regular roadsafety education programs for professional drivers.	Sporadic action by Traffic Police	The agency responsible for Activity 4.4 should be doing this as well
4.9. Improve driver license system through: <ul style="list-style-type: none"> ▪ Graduated licensing for novice drivers ▪ Equipment-controlled trials ▪ One-year probation for commercial drivers ▪ Integrating the National Vehicle Registry ▪ Improved examination procedures ▪ Other requirements. 	Sporadic activities by Traffic Police	To be initiated in the next National RSAP period
4.11. Institutional support for TP: <ul style="list-style-type: none"> ▪ Training: <ul style="list-style-type: none"> ○ Int'l training, ○ Regular training ▪ Enforcement logistics ▪ Improve speed controls <ul style="list-style-type: none"> ○ Random checks- radar guns – all vehicles ○ Timecard monitor -public vehicles. 	No nation-wide action	To be initiated in the next National RSAP period
4.12. Strictly enforce seatbelt and helmet rule as per VTMA and its amendment.	No enforcement of helmet for pillion rider	To be initiated
4.13. Strictly enforce passenger and crew safety rules for commercial vehicles.	No action	To be initiated
4.14. Establish roadsafety unit in DOTM and initiate research on	Technical Unit established	To be strengthened

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next NRSP period
safety for the vulnerable roadusers		
4.15. Encourage PPP initiatives to establish adequate and state-of-the-art driving training areas.	No action	To be initiated
4.16. Develop the capacity of driving schools (guideline + training)	No action	To be initiated
4.17. Install CCTV cameras at various junctions.	Sporadic action by Traffic Police	To be systematically installed and monitored

Pillar 5: Post-Crash Response

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next National RSP period
5.1. Introduce a toll-free telephone number for medical emergencies.	Done	The call should be automatically transferred to the nearby ambulance dispatch center
5.2. Develop a national ambulance policy with: <ul style="list-style-type: none"> Directives for the response to post-crash victims Measures to improve response time. 	National Ambulance Policy established	Directives for the response to post-crash victims and measures to improve the response time yet to be introduced.
5.3. Provide trauma-care training to medical personnel at all levels (primary, secondary, tertiary) with expertise on the treatment of road accident victims.	No training events specific to road crash victims	A training program is to be established
5.4. Investigate funding sources to assist rehabilitation of crash victims such as: <ul style="list-style-type: none"> Health insurance Third-party cover in vehicle insurance Mutual recognition of other insurance (green card system) Other sources. 	No action	Comprehensive and compulsory insurance to be taken by each vehicle owner
5.5. Conduct medical research on major injuries of crash victims	Initiated	A selection threshold of the crashes to be investigated, roster of

Proposed activity as per National RSAP 2013/20	Progress made	Relevant tasks for the next National RSP period
and prioritize care for such injuries at trauma centers.		investigators, and a framework for logistical support for such investigations to be established
5.6. Ensure people with disabilities are not deprived of employment opportunities.	It is already a part of the Labor Act	Implementation of the existing legal provision to be facilitated
5.7. Develop and maintain a comprehensive injury surveillance system in hospitals and health centers with the following: <ul style="list-style-type: none"> Uniform, standard entry in the trauma registry Expand control policy on drunk driving Improved RTA reporting. 	No new developments	<ul style="list-style-type: none"> The Health Sector Masterplan to include road crash casualty as a separate dataset in the HMIS Equipping the Traffic Police to check driving under the influence Country-wide coverage by RAIMS
5.8. Establish a roadsafety unit at MOHP and provide the following institutional support: <ul style="list-style-type: none"> Inter-agency referral system (e.g. hospital referral of potential accident-blackspots) Networking with focal persons at the concerned agencies. 	WHO cell undertaking some of these activities	Instead, road safety focal person at MOHP for National RSC and at MOSD for Provincial RSC to be defined as prevention of road crash injuries is not a core activity of MOHP, requiring a specialized unit
5.9. Train the emergency agencies (e.g., Traffic Police, Civilian Police Army, Fire-brigade, paramedics, etc.) to improve post-crash response to RTA victims.	No action	To be initiated
5.10. Set up a network of ambulance services along the major highways, urban and rural roads.	Each ambulance can be contacted only at the private cell phone number of the driver	All the ambulance in a district need to be contacted through a district-level dispatch center
5.11. Develop a strategy and policy to fund medical rehabilitation and disability from RTAs	No action	Use of insurance to be promoted

ANNEX 2: National RSAP 2021/30 MONITORING FRAMEWORK*Table 1: Monitoring Framework for Area I, Multimodal Transport and Land-use Planning*

S.N.	Activities		Program					Responsible Agencies		Monitoring				
			Government Level			Execution Period				Target Setting		Monitoring Framework		
	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsible Agency	Frequency	Data Source
1.1	Introduction of safe system approach as an integral element in land use planning, city plnning, road design, transport system planning, and governance	The adoption of a safe system approach is encouraged to achieve road safety targets and is also key recommendations from the Stockholm Declaration 2020												
1.1.1		The approach needs to be reflected in the Road Safety Bill under promulgation	X			X		MOPIT	MOLMCPA, MOUD, MOLJPA	Incorporate safe system principles in the Road Safety Bill.	-	MoPIT	Once	GoN Gazette
1.1.2		The approach needs to be reflected in landuse plans, settlement development plans, and road network plans.	X	X	X	X		DUDBC	DoLI, MOPIDs, DOR, DOTM, Municipalities	Road safety features will be considered while developing municipality by-laws, urban development bylaws, urban road standard	DUDBC policy guidelines have made provision for traffic management	NRSC	Yearly	Meeting with DUDBC officials
1.2	Segregation of road users													
1.2.1	Segregate pedestrians, bicycles, NMT, and other slow-moving vehicles from fast-moving vehicles along SRN Roads (atleast at and nearby settlement areas).	With settlements springing up along transport corridors, segregated pedestrian walkway and NMT lane as a part of all road construction/ reconstruction/ rehabilitation package needs to be provisioned.	X		X	X	X	DOR/MoPID/TID	MOPID, Municipalities	Provisioning to segregate different modes of traffic in all road development projects	Major links to the Indian border have traffic segregated based on speed	NRSC	Yearly	Road statistics of road administration agencies
1.2.2	Segregate fast-moving traffic on opposing lanes whenever the cruising speed is likely to exceed 40 kmph	Only markings (centerlines) are inadequate to segregate opposing traffic to avoid head-on and side-swipe collisions.	X	X	X	X	X	DOR/MoPID/TID	Traffic Police, MOPIDs	Construction of median island a part of all 4-lane roads. On 3-lane roads and narrow 4 lanes, replace median island with continuous New-Jersey barrier	Though the provision of segregating islands has been made on some important roads (Maitighar-Tinkune, Kathmandu Ring), they lack medians (Note: at Tinkune-Koteshwar, New-Jersey barrier at the center is working well while a central railing on Budhanilkantha road rather acts as a safety hazard).	NRSC	Yearly	Report from DOR representative to NRSC

[illegible]

[illegible]

S.N.	Program								Monitoring					
	Activities		Government Level			Execution Period		Responsible Agencies		Target Setting		Monitoring Framework		
	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsible Agency	Frequency	Data Source
	traffic in the city cores.	only be successful when complimentary facilities of parking, catering, shopping, and recreation are developed simultaneously.												
1.8.1					X	X	X	Local Bodies	MOPIDs	Development of overhead/ underground parking lots near UNESCO heritage sites and its surroundings through PPP.	The capacity of existing surface parking lots has exhausted and prompt drivers to practice illegal road-side parking that enhances crash risk.	MoPIT	Yearly	Web portal of Metro/ Sub-Metro municipalities
1.8.2					X	X	X	DOTM	Municipalities, Traffic Police	Incorporate location identifier/chip in Vehicle registration plate and discourage vehicles without permit to drive into the designated area.	The existing registration plates have only one attribute i.e., Province as the location identifier and are insufficient.	NRSC	Yearly	Report from DOTM representative to NRSC
1.8.3					X	X	X	TMO	Municipalities, Traffic Police	Develop bicycle lanes and bicycle parking area in the city core and on the roads leading to it	Shared bicycle lanes introduced by Lalitpur municipality, however, enforcement is still an issue to be solved.	NRSC	Yearly	Discussions with the metro/ sub-metro municipalities and bicycle clubs
1.9	Undertake adequate study prior to awarding route permits for inter-province buses and make necessary arrangements to record routes in an electronic platform	The starting, ending and all the obligatory points in the awarded route need to be recorded	X	X		X	X	DOTM/TMO	Traffic Police, NRSC, Provincial RSC	GIS file for all routes	Route permit awarded but not recorded properly	NRSC/Traffic Police	Yearly	Report from DOTM representative to NRSC
1.10	Draft road traffic management bill addressing road safety-related issues.	Traffic management and road safety go hand-in-hand as measures supporting one compliments the other. Mobility requirement depends on the type of economic activity, topography, population, and settlement pattern. Thus, instead of the Federal law, Provincial Law with details elaborated on the Municipal rules can better address the local issues.												
1.10.1			X	X	X	X	X	Provincial RSC	MOIAL, TMO, MOPIDs, Local	To relieve congestion in urban areas: initiate strategies	Initiatives made by the local community, NGO and Traffic	NRSC	Yearly	GON Gazette

S.N.	Program								Monitoring					
	Activities		Government Level			Execution Period		Responsible Agencies		Target Setting		Monitoring Framework		
	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsible Agency	Frequency	Data Source
									Bodies	including congestion pricing schemes, entry restriction based on the time of the day and type of vehicles, the minimum number of passengers in cars, maximum parking duration, and parking/ stopping spots for buses and taxis.	Police in the past were unsuccessful due to lack of support from other sectors.			
1.10.2			X	X	X	X	X	Provincial RSC	MOIAL, TMO	Ride-sharing culture will be developed.	Few ride-sharing startups have stopped their operation due to lack of ride-sharing friendly policies.	NRSC	Yearly	GON Gazette
1.10.3				X		X		Provincial RSC	MOIAL, TMO	Determine routes, frequency, normal/ extended operating hours, normal/ off-hour fare, and size of intra-province buses while ensuring sustainability and attractiveness of services.	In the past, night bus subsidized by KMC was found to be unsustainable due to low ridership, and services were halted.	NRSC	Yearly	GON Gazette
1.10.4					X	X		Provincial RSC	MOIAL, TMO	Registration and management of Non-motorised transport (NMT) as data are crucial to planning infrastructures and services.	In the past, it was practiced by city councils.	NRSC	Yearly	GON Gazette
1.11	Ensure accessibility of public vehicles to all road users including the physically challenged ones.	There are two aspects to it:												
1.11.1		(a) In line with SDG Goal 9.1 and 3.6, accessibility to road network has to be increased to remotest settlements while minimizing road casualty	X	X		X	X	DOLI	NPC, TMO, DOR	Development of a GIS-based national road accessibility model to find settlements still not connected through accessibility audit.	A GIS model developed in 2005 to find the assessment of settlements needs to be updated.	NRSC	Yearly	Report from DOLI/MoPID representative to NRSC
1.11.2		(b) In line with SDG Goal 11.2, safe transport has to be ensured for all road users, including the elderly and disabled		X	X	X	X	TMO	NPC, Traffic Police	Development of a GIS-based model on bus routes and frequency	The paper-based database on route allocation with DOTM and TMO needs to be digitized and disseminated widely	DOTM	Yearly	Report from TMO
1.12	Strictly enforce the following existing legal provisions.	Until the laws are updated, rigorous enforcement of existing legal tools through additional support of multiple stakeholders should be a priority.												
1.12.1	Ensure vehicles are	Though attempted by the	X	X	X	X	X	Traffic Police	Transport	Enforce parking at road edge or	Often buses are found to stop	MOPIT	Yearly	Report from

S.N.	Program								Monitoring					
	Activities		Government Level			Execution Period		Responsible Agencies		Target Setting		Monitoring Framework		
	Actions	Clarification	Federal	Provincial	Local	15th Plan	16th Plan	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsible Agency	Frequency	Data Source
	stopped only at designated locations (as per MVTMR § 122, 125).	Traffic Police sporadically, stopping at non-designated locations reduce road capacity and increase conflict situations							operators, DOTM, DOR, Municipalities, MOPIDs	lay-bye for a month each year to help develop a habit among passenger buses	on the middle of the road for embarkation/ disembarkation passengers/goods			Traffic Police representative to NRSC
1.12.2	Ensure driving only on the designated lane (as per MVTMR § 135).	Driving on centre of roadway on highway and encroaching on opposite lanes on city roads are the reason for head-on collision and carrying capacity reduction of roads.	X			X	X	Traffic Police	Transport operators, DOTM, DOR, Municipalities, MOPIDs	Enforcement for driving in the allocated lane in the highways for a month each year and in city roads every day. Construction of median barriers a part of every road development project with more than 2 lanes.	In highways, drivers tend to drive in the center and in the city roads motorcycles tend to encroach opposite lanes	MOPIT	Yearly	Report from Traffic Police representative to NRSC
1.12.3	Ensure prohibition of unauthorized road works and opening of access (as per § 19 of PRA).	The unauthorized accesses to the highways increases conflict points and reduces the cruising speed.	X	X	X	X	X	DOR	Nepal Police, MOPIDs, Municipalities	No unauthorized access connected to SRN roads	The enforcement has become laxer in the last couple of decades	MOPIT	Yearly	Report from DOR/DOLI representative to NRSC
1.12.4	Ensure prohibition on the straying of domestic animals on the road (as per MVTMR § 138).	This provision is difficult to enforce as there are no takers for stray bulls and dogs when the municipalities round them up for sale. Thus, this problem needs a new approach by making the animal owners (at the time of the animal's birth) responsible.	X				X	MOPIT, Traffic Police	MOLJPA	Tagging and registration of all domesticated animals at birth: to be included in the Road Safety Bill	Municipalities round up animals and leave them in the forests as there are no buyers when auctioned or even leave them to graze on the road-side	NRSC	Once	GoN Gazette
1.13	Create a Transport Management Cadre within civil services	Despite the specialized knowledge required in planning and managing transportation, most of the staff at DOTM and TMO are from Administrative Services and must follow a 2-year placement cycle.	X				X	DOTM	MOPIT, Council of Ministers	Formation of Transport Management stream in civil services	Most of the capacity development initiatives within DOTM and TMO are ineffective due to the frequent transfer of its officials. Though the vehicle inspections are to be done by Automobile Engineers, most of the time, it is managed by Administrative personnel.	NRSC	Yearly	GON Gazette
1.14	Bring professionals from different sectors together to foster a better understanding of road safety-related issues.	Lack of proper understanding of standard procedures, technical terms, capabilities, possibilities, and sector-relative constraints between inter-sectoral professionals hinders road safety collaborations	X	X	X	X	X	NRSC	Traffic Police, DOTM, DOR, MOPIT, DOE, MOHP	Multi-disciplinary participation in road safety-related discussions and investigation of major road crashes	In MOPIT organized road safety discussions, participation from diverse sectors is standard practice.	NRSC	Yearly	Report from representatives from different sectors to NRSC

Table 2: Monitoring Framework for Area II, Safe Road Infrastructure

S.N.	Program								Monitoring					
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Monitoring responsibility	Monitoring Frequency	Data Source
2.1	Network-wide safety assessment of SRN, LRN, and URN	The patented iRAP style star rating system is highly expensive to be adopted for all the roads. A simpler system that is reliant on secondary data and could be used for assessment on an annual basis needs to be explored so that the planned activities are economically sustainable. Alternatively, safety assessment could be carried out by local experts using ViDA while maximizing the use of secondary data collected for other purposes (e.g., traffic count for AADT, video for SDI).												
2.1.1			X			X		MOPIT/ DOR	DOTM, Traffic Police/ Academica	Assessment of SRN	None	MoPIT	Yearly	Annual report of MoPIT/DOR
2.1.2				X	X		X	MOPID/TID/DOLI	DOTM, Traffic Police/Academica	Assessment of City Roads and LCN	None	DOLI/MoPID	Yearly	Annual report of DoLI and the respective municipalities
2.2	Nation-wide rollout of web-based road crash database and dissemination of data to the relevant concerned agencies.	The RAIMS piloted along Kathmandu-Birgunj corridor needs to be expanded throughout the country. Data, filtered to suit the intended use, needs to be availed to agencies to devise preventive measures and to evaluate the performance of implemented measures.												
2.2.1		No agency is legally responsible for collection and analysis of road crash data	X			X		Traffic Police	TMO/NRSC	Legally mandate and assign the responsibility to record and upload crash data to Traffic Police.	A pilot project on web-based road crash data collection has been introduced, and under implementation along the KTM - Birgunj industrial corridor.	NRSC	Yearly	GoN Gazette
2.2.2		Once the responsibility to collect crash data is assigned, extent of access to the database to be ascertained	X	X	X	X		Traffic Police	NRSC	Data sharing modality will be established (who can access which part of the data)	Data is availed upon formal request	NRSC	Yearly	Annual report of NRSC
2.2.3		Capacity building to improve data quality	X	X	X	X		Traffic Police	NRSC	A separate dedicated unit will be established with adequate human	Couple of training was organized and given to few Traffic	NRSC	Yearly	Annual report of NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Monitoring responsibility	Monitoring Frequency	Data Source
										and technical resources for managing data at the Federal, Provincial, and Local level.	Police personnel during the pilot phase of RAIMS.			
2.2.4		To make RAIMS datasets comprehensive, it should be linked with the HMIS database. As there could be many health facilities within a district, Traffic Police (the custodian of RAIMS) needs to be given non-editing access to HMIS.	X	X	X	X	X	Traffic Police	MOHP/ NRSC	Amend Health Sector Masterplan to record mortality and morbidity of road crash victims into HMIS and periodic reconciliation between RAIMS and HMIS datasets.	There is no mechanism to include hospital deaths of road crash victims in RAIMS unless the Police Officer on duty at the hospital reports it.	NRSC	Yearly	Report from MOHP and Traffic Police representatives to NRSC
2.3	Production of a pool of qualified Road Safety Auditors through training and certification.	The Train-the-trainer (TOT) and other continuous professional development (CPD) activities on road safety should be conducted regularly to build the capacity of local experts.	X			X	X	DOR	Institute of Engineering (IOE), Centre of Excellence on Road Safety, Roads Board Nepal	Train and participate 10 auditors in at least one audit per year	DOR in collaboration with ARRB conducted a TOT on road safety for 40 participants	MoPIT/ NRSC	Yearly	Annual report of NRSC
2.4	Encourage local training establishments to run training modules to enhance the capacity of road safety-relevant institutions.	Engaging local institutions in training and imparting road safety knowledge would ensure the sustainability of the planned activities and training programs	X			X	X	MOEST	DOR, DOLI, DOTM, Traffic Police,	Training calendar of DOR, DOLI, Police, DOTM to include road safety to train staff at federal and provincial levels	Traffic Police Academy conducts regular training for Police personnel. DOR and DOTM organize workshops.	NRSC	Yearly	Report from MOETH representative to NRSC
2.5	Establish mandatory provision for conducting road safety audits and its implementation on all categories of roads during different phases such as Feasibility, DPR, Construction, Pre-Opening, and Operation stage.	Most GOB funded SRN Road projects lack RSA, while those involving RSA fail to incorporate recommendations due to budgetary limitations. Whereas in externally funded projects, RSA is done at the pre-opening stage when the fund is usually limited, and the project is under time-pressure to complete and is therefore removed from the work contracts. On non-SRN roads, there is no provision for RSA.	X			X		NRSC	DOR, DOLI, DOTM, Municipalities, Traffic Police, MoPID, TID,	Mandate the need for RSA at different stages of road development and rectification of qualified findings through its inclusion in the Road Safety Bill	A guideline on RSA and standing order to use it for SRN roads issued in 1997	MoPIT	Once	GoN Gazette
2.6	Pilot Intelligent Transport System with traffic actuated signals, remote monitoring and control of traffic speed and flow, SMS/email delivery	The current pre-timed signal system cannot dynamically respond to traffic fluctuations. The efficient deployment of Traffic Police personnel requires central control.	X	X	X	X	X	DOR, MOPIDs	Municipalities, DoTM, Traffic Police	All future installation of traffic and toucan signals to be road user actuated and integrated with central control.	Traffic signal system with pre-programmed timings has failed in Kathmandu not only for technical reasons but also because of the VIP culture, characterized by	Traffic Police	Yearly	Report from DOR representative to NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Monitoring responsibility	Monitoring Frequency	Data Source
	of traffic violation tickets, and so on.										traveling in a large entourage.			
2.7	All externally funded roads projects to be developed as model links by addressing all the 5 Action Areas and evaluate results for future replication	It is essential to collect baseline data, analyze crashes, and evaluate safety intervention/improvements periodically (after a certain period e.g., 5 years) to ascertain the effectiveness of the interventions. Equipping the Traffic Police offices with necessary logistic support along the corridor should be a part of the road improvement projects.												
2.7.1			X	X	X	X	X	DOR, DOLI	National/ Provincial RSC	Kilometers of road designed/ constructed with the consideration of a safe system approach.	No archive on safety (and other) issues considered in design/ improvement	MoPIT	Yearly	Report from DOR/DOLI representative to NRSC
2.7.2			X	X	X	X	X	DOR, DOLI	National/ Provincial RSC	The number of case studies on lessons learned published.	No formal documentation so far except a 1987 ICIMOD publication on LJ Road	MoPIT	Yearly	Report from DOR/DOLI representative to NRSC
2.8	Develop roadside amenities, truck/ bus laybys, and refresh center for long route drivers	Although the laws require that the drivers on long routes should take frequent breaks, this is not possible in the absence of parking facilities with proper resting places. Planned wayside amenities could also boost the local economy in addition to making the journeys safer.	X		X	X	X	DOR	Municipalities, Traffic Police	Development of wayside amenities along National Highways made a part of road improvement projects. The amenities to be operated through PPP.	Many unplanned settlements along highways in Nepal tend to develop from the stopping locations for drivers.	Traffic Police	Yearly	Report from DOR/DOLI representative to NRSC
2.9	Acquiring and maintaining right-of-way beyond road edge for all categories of Roads	Although land acquisition for road construction is expensive, provision of at least 2-3 m narrow strip beyond the road edges would considerably reduce the chances of road crashes through segregation and improved visibility.	X			X	X	DOR	Traffic Police	Declaration of 6m setback from the edge of all SRN roads in line with PRA § 3Ka.	The current trend of acquiring a narrow strip of land for road development: enough only for pavement and shoulders, limits the availability of safe road space for both motorists and VRU's.	MoPIT	Yearly	Report from DOR representative to NRSC
2.10	Issue operation permit to goods vehicles based on road condition, possible maximum axle load	Goods vehicles of suitable capacity and model for a road type should only be allowed. This would also help prevent pavement deterioration.	X	X		X		TMO	Traffic Police	Publication of guidelines to issue operation permit to goods vehicles	None	Traffic Police	Yearly	Report from TMOs

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Monitoring responsibility	Monitoring Frequency	Data Source
	limit, vehicle characteristics, traffic mix, and transportation requirements.													
2.11	Ratification of 1968 Convention on Road Signs and Signals	This convention provides commonly agreed road signs and signals, road markings, and specifies the norms for designing and installing traffic lights as well as focuses on safe infrastructure, which eventually contribute to safer roads and mobility.	X			X		MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1968 convention	Although the sign and signals currently used in Nepal are based on the convention, formal ratification increases their legitimacy.	NRSC	Yearly	GoN Gazette
2.12	Introduce mandatory provisions of work-zone safety in all road projects.	The provisions as per the Occupational Health and Safety (OHS) Guidelines 2019 is applicable also in case of road works												
2.12.1			X	X	X	X	X	MOLJPA	DOR, MOPIDs, Municipalities	Exercising § 19 of PRA, § 126 of MVTMA, and the Civil Code, provision to make work zone safety (use of PPE, fencing, delineation, etc) a priority in all works (road works, laying of water/ sewer/ telecom/ electricity conduits, etc) on roads. Work zone safety should be a paid item with specifications and monitoring defined.	The Public Procurement Act and DOR's Standard Specification document do not address work zone safety.	NRSC	Yearly	Meeting with officials from MOLJPA and Public Procurement Monitoring Office in order to make OHS requirement a part of the General Condition of works contracts
2.12.2			X	X	X	X	X	MOLJPA	DOR, MOPIDs, Municipalities	Provision for compulsory insurance in road works contracts of all sizes, executed by any agency and in any geographic location.	The provision for insurance in the Standard Bidding Document does not gets invoked for small works under quotation and forced account.	NRSC	Yearly	Meeting with officials from MOLJPA and Public Procurement Monitoring Office
2.13	Prioritize maintenance over the construction of new roads	Potholes and undulation of the road surface and unlike road roughness enhance crash risks, damages vehicles, and causes fatigue to road users.												
2.13.1			X			X	X	DOR	NPC, MOF, RBN	Instill concept to prioritize periodic maintenance of roads	Periodic maintenance is prioritized as per the strategic	MoPIT	Yearly	Report from DOR representative to NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Monitoring responsibility	Monitoring Frequency	Data Source
										based on the traffic volume	importance of roads.			
2.13.2			X	X	X	X	X	DOR, MOPIDs, Municipalities	NPC, MOF, RBN	Initiate systematic elimination of traffic bottlenecks as a part of road development package (caused by abruptly narrowed intersections, road sections, culverts, inadequate extra-widening at sharp curves, etc.).	Periodic maintenance is prioritized as per the strategic importance of roads.	MoPIT	Yearly	Report from DOR representative to NRSC
2.14	Update and develop design guidelines on safer roads													
2.14.1	Update the existing RSA Manual based on the safe system assessment framework for all categories of roads	The existing RSA Manual is based on the old 3-E concept of road safety and the checklists presented are inconsistent with a safe system. It needs to be updated to the Action Area basis to match the devolution of power as per the new constitution, the achievement of SDG Goals, global trend, advancement in road construction, and situational analysis of road crashes in Nepal. It would ensure uniformity in conducting and reporting road safety audit recommendations.	X	X		X		MOPIT	DOR, DOLI, DOTM, Traffic Police	RSA manual will be updated	A road safety audit manual was developed in 1997.	MoPIT	Yearly	Annual report of NRSC
2.14.2		Considering the cross-drainage structures on the road networks have become crash blackspots and traffic bottlenecks, the existing Road Safety Note on Safety at Bridge needs to be revised and updated.	X	X		X		NRSC	DOR, DOLI, DOTM, Traffic Police	RSN on Safety at Bridges will be revised	A safety note on safety at bridges was developed in 1997.	MoPIT	Yearly	Annual report of NRSC
2.14.3		The Road Safety Notes and Traffic Sign Manual developed in the past have now become obsolete.	X	X		X		NRSC	DOR, DOLI, DOTM, Traffic Police	Notes on side drain, barrier, delineation, treating crash sites, and Traffic Sign Manual need to be updated	The previous versions were published in 1998.	MoPIT	Yearly	Annual report of NRSC

Table 3: Monitoring Framework for Area III, Vehicle safety

[illegible]

		As it is difficult to unload some cargo (eg: fly ash) from across the border once they get into Nepal, the axle load needs to be checked at the border crossing points as well.												
3.4.1			X			X	X	DOTM	Transport operators, Traffic Police, DOR	Establish or operate under PPP model a weighbridge in each 50km of CRN roads.	15 weighbridges operated by Federation of Truck Transport Entrepreneurs	NRSC	Yearly	Report from DOTM representative to NRSC
3.4.2			X			X	X	DOTM	Transport operators, Traffic Police, DOR	Establish a national database linking weighbridges at border crossing points and on highways	There is no system to share data among NITDB (border crossings), private operators (on highways), and DOTM for assessment of the seriousness of the vehicle overloading problem, and the implementation of vehicle overload control laws and regulations.	NRSC	Yearly	Report from DOTM representative to NRSC
3.5	Establish a modality to encourage public vehicle operators to maintain a better safety record.	Very important but difficult to verify unless vehicle registration data is in electronic format and is accessible whenever action against a goods or passenger vehicle has to be taken.						Traffic Police	DOTM, TMO	Provision of financial incentives during vehicle renewal (E.g. low or no renewal fee etc.) will be established and implemented.	It is customary for the Traffic Police to felicitate a few taxi drivers during Traffic Safety Weeks	Traffic Police	Yearly	Annual report of DOTM/NRSC
3.6	Establish a centralized vehicle database system integrating vehicle registration, periodic inspections, and maintenance.	A centralized vehicle database to monitor their roadworthiness is essential for police works as well as to encourage the private sector to invest in VFTC, service centers, international driving test centers, and so on. It also helps in determining the right make/model for certain topography, and other commercially sensitive parameters.	X	X		X	X	TMO	Traffic Police	Establish a provincial and national database to keep the record of initial registration, vehicle use authorization, inspection history, crash history, ownership history, and driver history. Grant access to the registration data to all TMO and Traffic Police Offices, and disseminate regularly on the official website.	Paper-based vehicle registration database at TMO records only ownership history. Data on decommissioning of vehicles and the re-registration in a different Zone are not updated.	DOTM	Monthly	Report from TMOs
3.7	Ratification of 1997 Agreement for the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles	The agreement provides a legal framework for the inspection of wheeled vehicles and the mutual recognition of inspection certificates for cross-border traffic.	X			X		MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1997 convention	The parameters for the roadworthiness test of vehicles in VTMR are inadequate to ensure that only safe vehicles are allowed to ply on the road. The same is the case in other BBIN countries.	NRSC	Yearly	GoN Gazette
3.8	Amend the Guidelines on vehicle fitness inspection and testing to include maintenance	One of the conditions set by vehicle manufacturers and insurance companies is that	X			X	X	TMO	DOTM	Establishment of manufacturer accredited workshops at roadside amenities under the PPP model.	Maintenance of motor vehicles is mostly done at non-certified roadside shops by underqualified	DOTM	Yearly	Report from Traffic Police representative to

	workshops to be recognized by the vehicle manufacturer and qualification of authorized mechanics.	the maintenance needs to be done at authorized workshops and by qualified personnel only. The guidelines need to be amended to comply with the 1997 Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles									staff. It has resulted in the vehicle manufacturer not accepting responsibility in case of mechanical failures and insurance companies declining to honor the policies.			NRSC
3.9	Explore the possibilities to authorize the private sector for testing the vehicles and issuing driving permits.	It can facilitate to clear the backlog of testing of vehicles and issuance of driving permits.	X	X		X		TMO	FNCCI, Traffic Police	A study commissioned to explore the possibility and required legal framework	At present, DOTM has taken PPP initiatives and been conducting driving tests at privately-owned test centers.	DOTM	Monthly	Meeting with driving training center owners, FNCCI and MOLJPA
3.10	Strictly enforce the existing legal provisions on compulsory insurance against motor vehicle crashes as per MVTMA Chapter 8 (MVTMR Chapter 7)	The suspension of the compulsory insurance clause has been argued in the pretext of increased travel fare to cover insurance premiums. However, insurance is important to safeguard both operators and users from crash consequences.	X	X		X	X	DOTM	Traffic Police	Minimum insurance threshold specified; Registration/ renewal only upon proof of insurance.	Despite legal provision, the implementation has been made compulsory for only private vehicles (cars).	NRSC	Yearly	Report from Traffic Police representative to NRSC
3.11	Strictly enforce the following existing legal provisions for safer vehicles:	Until the laws are updated, rigorous enforcement of existing legal tools through additional support of all concerned stakeholders should be a priority.												
3.11.1	Ensure only vehicles meeting acceptable standards for safe driving are allowed to ply (as per VTMR § 17, 144).							Traffic Police	TMO	Roadside random check to test compliance with some of the parameters included in annual vehicle tests.	Checks limited to visual inspection of vehicles to determine fitness at the time of registration renewal	DOTM	Monthly	Report from Traffic Police representative to NRSC
3.11.2	Ensure loading of vehicles does not exceed the manufacturer's specifications or as legally allowed limits as per VTMA § 102, 117, and VTMR § 15.							Traffic Police	TMO	Impose penalty on all overloaded trucks exiting from ICD, and to all vehicles with unprotected overhangs	Overloaded buses and trucks often escape persecution due to the lack of instrumentation. Still, the Traffic Police has in year 2018/19 taken action against 196,162 drivers for driving overloaded vehicles.	DOTM	Monthly	Report from Traffic Police representative to NRSC
3.11.3	Ensure vehicles carrying dangerous or oversized goods use conspicuous signs (as per VTMA § 127).	The 1957 UN Agreement concerning the International Carriage of Dangerous Goods by Road though not ratified by Nepal, could be complied with for better road safety.						Traffic Police	TMO	All vehicles carrying dangerous or oversized goods to use conspicuous signs	Vehicles carrying oversized goods are prevalent on the road	DOTM	Monthly	Report from Traffic Police representative to NRSC
3.11.4	Monitoring of bus/truck		X				X	Traffic	TMO	Publication of directory of	Operating license awarded by	DOTM	Monthly	Report from

	fabricators and service centers							Police		approved bus/truck fabricators and service centers	Department of Cottage Industry			Traffic Police representative to NRSC
3.12	Realtime tracking of all vehicles plying on SRN and PRN and local roads	Monitoring of over-speeding and deviation from the allocated route is not possible unless the vehicles are fitted with GPS, RFID chips, or similar tracking devices that show the location in real-time. It would also assist in crash detection and rescue.												
3.12.1			X			X		Traffic Police, Transport operators	DOTM	Launch a pilot project to demonstrate benefits of real-time monitoring by installing commercial vehicles operating along two highway sections with a tracking device	Sajha Yatayat, a few private bus operators, school buses, and UN agency vehicles have implemented a GPS vehicle tracking system.	DOTM	Real-time	Annual report of NRSC/Traffic police
3.12.2			X			X	X	Transport operators	DOTM, TMO Traffic Police	Tracking devices will be installed on all commercial vehicles and linked with the centralized vehicle tracking/monitoring system	Neighboring countries have already mandated to manufacture buses and trucks with GPS device.	DOTM	Real-time	Report from Traffic Police representative to NRSC

Table 4: Monitoring Framework for Area IV, Safer Road Use

S.N.	Program								Monitoring					
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
4.1	Ratification of various convention, UN Resolution and guideliness													
4.1.1	Ratification of the 1975 Agreement on Minimum Requirements for Driving Permits	This agreement set out the minimum requirement of the examiner, detailed testing procedures i.e., theoretical, practical, skill testing, test sequence, duration, minimum standards of mental and physical fitness etc.	X			X		MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1975 agreement	Many elements of the agreement are not covered by the driving tests procedure and test content in Nepal	NRSC	Yearly	GoN Gazette
4.1.2	Ratification of BBIN should be preceded by the 1968 Convention on Road Traffic	BBIN would enable unhindered traffic movement between Bangladesh, Bhutan, India, and Nepal. Thus, a set of rules applicable to international traffic is of utmost importance	X				X	MOPIT	MOLJPA, DOR, DOTM	Ratification of the 1968 convention	The local laws in BBIN countries lack unified provisions on what drivers and pedestrians must do at crossings and intersections.	NRSC	Yearly	GoN Gazette

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
		as there exist considerable differences between the local laws in the 4 countries.												
4.1.3	Aligning the existing legal tools for compatibility with the ratified UN resolutions	To ensure full compliance and to avoid confusion, the local laws need to be amended to incorporate the provisions in the UN legal tools.	X	X			X	MOPIT	MOLJPA, MOIALs, MOPIDs, DOR, DOTM	Amendment of local laws to incorporate the provisions in the conventions	A few provisions of the UN legal tools are already incorporated in the existing local laws	NRSC	Yearly	GoN Gazette
4.1.4	Amend MVTMR to accommodate a list of offenses, violation of which on incremental basis is made proportional to the duration for which a driving license would be suspended.	As observed in other countries, instead of the present practice of imposing only monetary fines against traffic rule violation, suspension of driving license for an exponential longer period (and total ban on driving during the suspended period) would be a better deterrent.	X			X		DOTM	MOLJPA	Amend MVTMR to ban driving for a different duration based on the corresponding seriousness of the offense committed.	A financial penalty is imposed based on the seriousness of the violation. However, the vehicle is allowed to be driven by the violating driver	NRSC	Once	GON Gazette
4.2	Update the list of etiquette for the driver, conductor, and passengers in the Public Transport Code of Conduct 2067 based on 1968 Convention on Road Traffic. Also include the percentage of standees allowed in different passenger vehicles; essential carry-on tools and spares; accessibility for the elderly and disabled.	Many of the common etiquettes: to keep the doors closed, no loud music, helping the disabled and elderly, no force packing of passengers, not stopping on the middle of driving lanes, no unlisted stops, list of essential tools and spares to carry, the maximum size of passenger carry-on baggage, and so on needs to be added to rule out chances of crashes.	X			X		DOTM	Traffic Police, DOR	Publish the revised version of Highway Code "Sadak Prayogkarta Nirdeshika" addressing contemporary traffic management and road safety issues with pedestrians, cyclists, motorcyclists, and drivers of commercial vehicle	The present version of the Highway Code was published in 1998	NRSC	Once	Report from DOTM representative to NRSC
4.3	Conduct nationwide road-safety awareness campaigns.	The road safety awareness campaigns in schools being conducted by Traffic Police needs to be extended to marketplaces, city centers, and rural communities to improve safety awareness general public and across all age groups. The Police need to be provided with necessary support (financial, technical, administrative, etc.) by other agencies. All road safety education activities should be based on the themes so that their		X	X	X	X	Traffic Police / Provincial RSC	Provincial RSC, MOEST, Schools, Municipalities, NGO	On an annual basis, conduct at least one program per school and ensure one program is carried out by each school in each local bodies. Each year Provincial RSCs should come up with a list of road safety themes, based on the road crash/casualty pattern.	In the year 2018/19, Traffic Police successfully carried out 11,075 and 817 awareness programs in schools and communities, respectively. Different agencies have different approaches to safety education which at times fails to address the current road safety issues and needs	NRSC	Yearly	Report from Traffic Police representative to NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
		effectiveness could be assessed later. The government advertisements on different media platforms. A part of this could be for safety issues.												
4.4	Accommodate road safety in the next revision of formal and informal education curricula, teachers' guide, and standard reference material.	Although some of the textbooks used in private schools cover few components on road safety, its inclusion in the school standard curriculum with age-appropriate contents and scope could help induce safe road-use behavior from a young age.	X	X		X	X	MOEST	Curriculum Development Center, National/ Provincial RSC	A chapter on road safety in the text book for each level in school through amendments in: (i) Child Development Center Curriculum; (ii) Outline for School Level Curriculum 2076; (iii) Outline for Local Level Curriculum Development and Implementation Guidelines 2076; (iv) Curriculum and Text Material Development Guidelines 2073; (v) Curriculum for Gumba, Madarsha, Gurukul, Mudhum and Intellectually Disabled.	A few elements of road safety components are covered in the textbooks used in private schools for up to class 5.	NRSC	Yearly	Report from MOEST representative to NRSC
4.5	Promote School Zone Safety Program.	A school zone safety program could help improve child pedestrian safety in school zones and reduce injuries and fatalities. If its provision is included in the Road Safety Bill, the application could be made uniform throughout the country.												
4.5.1			X				X	MOPIT	MOLJPA, Traffic Police, DOTM, NGO	Mandate setup of safe school zone programs as a part of the Road Safety Bill as well as Star Rating for School Program..	Not specifically stated in the draft Bill	NRSC	Once	GoN Gazette
4.5.2			X			X		DOR	Traffic Police, DOTM	Publication of a separate technical note on school zone safety	DOR has been installing a couple of warning signs and zebra markings during the development of roads adjacent to schools	NRSC	Once	Report from DOR representative to NRSC
4.6	Develop model traffic theme-	Schools and parents are always		X	X	X	X	Municipalities	TMO, Traffic	Establishment of a model	Temporary settings as a part of	DOTM	Yearly	Report from

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
	parks that adds educational value for school children and teachers on road safety and traffic management.	in lookout for places to take their children to. A tiny traffic theme park at Bhrikuti Mandap has been receiving considerable number of visits each year.							Police	traffic theme-park including, bicycle lanes in each of the provinces through PPP.	big events in Kathmandu			TMO
4.7	Prepare a plan for observing National Road Safety Day and Road Safety Week	Such activities can help raise awareness of road safety among the general public and decision-makers. A week-long campaign might be required for Metro/ Sub-metro municipalities, while a day-long program could suffice in rural municipalities with a sparse population.		X		X	X	Provincial RSCs (Traffic Police until Provincial RSC are formed)	DOTM, TMO, MOPIDs, Traffic Police, NGO	A road-safety week per year in all metro/ sub-metros; a road safety day in all rural municipalities per year	In the year 2018/19, Traffic Police successfully organized 146 such events in the country.	NRSC	Yearly	Report from Traffic Police representative to NRSC
4.8	Develop and implement a driver training module focusing on defensive and safe driving	A comprehensive driving curriculum involving standard theoretical contents and practical training in real driving situations is needed to be adopted by all the driving training centers to better prepare new learner drivers for driving safely.	X			X		DOTM	TMO, MOPIDs, Municipalities	Develop and implement traffic safety training module as a part of the driving test curriculum	The current test curriculum mainly focuses on facilitating better traffic management (operating vehicle) than road safety.	NRSC	Yearly	Report from DOTM representative to NRSC
4.9	Conduct a TOT program for all trainers and mechanics of the driving training school/ centers.	The TOT program could provide participants with the skills and knowledge to effectively plan, deliver and train others on safe and efficient operation of different types of vehicles in different contexts and risk environments.		X		X	X	TMO	Driving Schools, DOTM, Traffic Police	Formal course curricula will be developed and implemented	To date, no formal course curricula have been developed and implemented. Also, no legal provision has been established to determine the qualification of the trainers and mechanics of the driving school. Mostly such training is conducted/managed by person holding a non-professional driving license.	DOTM	Yearly	TMO report
4.10	Develop and implement standard procedure while issuing a driving license in conformity to the 1975 Agreement on Minimum Requirements for Driving Permits													
4.10.1		The requirement of the examiner, theoretical part of the test, practical test, skill sets required, test sequence,	X	X		X	X	DOTM	TMO, Traffic Police	Uniform test parameters and procedure throughout the country	Only limited parameters as specified in the relevant UN convention has been followed.	NRSC	Yearly	GoN Gazette

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
		duration, minimum standards of mental and physical fitness as specified by the UN convention could be adopted to attain uniformity with international practices.												
4.10.2		In addition to the issuance of driving permits based on vehicle categories (e.g., motorcycle, car, bus, etc.), purpose-based (e.g., personal use, city taxi, long route commercial buses, trucks, etc.) categories could also be explored and develop separate test procedures considering differences in crash risks and hazards between occupational and non-occupational drivers.	X	X		X	X	DOTM	TMO, Traffic Police	Further categorization of driving permits based on the purpose of driving.	The driving test procedure covers only a few elements, as specified in the relevant convention.	NRSC	Yearly	GoN Gazette
4.11	Provision for a compulsory refresher course on traffic management and road safety during the renewal of the driving license.	The driving permits are renewed every 5 years. Numerous changes relevant to road safety and traffic management might have taken place over this period. A refresher course could help drivers understand new and existing traffic laws, and improve confidence and driving skills. With the curriculum developed, driving training centers could run such a course.												
4.11.1			X			X	X	DOTM	MOLJPA, TMO, Traffic Police	Make amendments in MVTMR for compulsory refresher training for all drivers at the time of driving license renewal	The present law requires proof of training participation only at the time of getting a license for the first time.	NRSC	Once	GON Gazette
4.11.2			X			X	X	TMO	Traffic Police	Develop and maintain an electronic database of drivers with event history including traffic violations committed, courses attended, etc. accessible at every Traffic Police office.	There is a paper-based database at present	DOTM	yearly	Driving permit database
4.12	Provision for compulsory	The mechanical properties,	X			X	X	DOTM	MOLJPA,	Make amendments in	In the present licensing system,	NRSC	Once	GON Gazette

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
	participation in upgrading training for drivers i.e., from motorcycle to car, car to heavy vehicle, conductor to bus/truck, heavy equipment to motorcycle/car, etc. as well as from one purpose to another (private to the professional driver).	carrying capacity, maneuverability, and blind spots vary for different types of vehicles, adding to the complexity in driving behaviors and knowledge. Thus, each change/addition of a vehicle type should require vehicle type-specific theory classes and tests.							TMO, DOTM, Traffic Police	MVTMR to require training participation for each change/addition of vehicle type in driving license while renewing driving license	the drivers need to take a written test only once. Whereas, separate practical tests are required for each type of vehicle.			
4.13	Introduce incentives for commercial drivers/operators having crash-free records for a year	Provision of incentives (financial, concessions of taxes, etc.) for drivers/operators can help encourage safe driving behaviors. However, the selection criteria need to be objective and transparent.		X		X	X	Provincial RSCs (Traffic Police until Provincial RSC are formed)	DOTM, TMO, MOPIDs, Traffic Police, NGO	Felicitate drivers/operators in a province.	Traffic Police has been felicitating a few drivers.	NRSC	Yearly	Report from Traffic Police representative to NRSC
4.14	Strengthened traffic monitoring through increased patrolling and remotely through CCTV along SRN, PRN and local roads	Due to difficulty in managing travel logistics, the patrolling is limited to nearby urban areas along good roads.												
4.14.1			X	X		X	X	Traffic Police	TMO	Each Traffic Police unit to develop /implement a patrolling plan.	Highway patrolling is mainly limited to escorting VIP entourages.	NRSC	Yearly	Report from Traffic Police representative to NRSC
4.14.2					X	X	X	Traffic Police	Municipalities	Traffic monitoring at known road crash blackspots remotely through CCTV	Electronic monitoring started in Kathmandu Valley	NRSC	Yearly	Report from Traffic Police representative to NRSC
4.15	Enhance enforcement capacity of Traffic Police	Although the basic office and living requirements of Traffic Police are covered by the Federal Government, the resources required for effective traffic management and road safety are tightly stretched within the organization.												
4.15.1		Equipment and tools could be bundled into the cost of a adjacent major new road development project as the police tasks increase many folds with the increment in the road network.	X	X		X	X	NPC	MOF	All Traffic Police below District Traffic Police Office to be provided with a minimum set equipment and tools.	Many Traffic Police personnel have been relying on irregular public transport to reach to crash sites and schools.	DOR/ DOLI	Yearly	Report from Traffic Police representative to NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
4.15.2		The cost of the minor equipment required to assist during road closures could be bundled into the cost of adjacent major new road development projects.	X	X		X	X	NPC	MOF	Each Traffic Police along SRN to get simple equipment such as winches, metal cutter, and chain-saw, to disentangle crashed vehicles, and remove obstructions (fallen tree/boulders)	Due to the lack of simple equipment at disposal, rescue of crash victims and clearing of the road from obstructions is delayed.	DOR/ DOLI	Yearly	Report from Traffic Police representative to NRSC
4.15.3		In mountainous areas, a heavy crane needs to be available within a couple of hours distance to pull out buses/trucks falling into the valleys	X	X		X	X	NPC	MOF	Traffic Police Offices at 100 km interval along SRN to get a 25MT crane	The Traffic Police do not have any such equipment. As a result, pulling out the erring bus/truck from the valley takes days.	NPC	Yearly	Report from Traffic Police representative to NRSC
4.15.4		Without speed measuring equipment, enforcement of speed limits will remain subjective. However, provision of a GPS vehicle tracking system covering the road link would help avoid the need for separate speed measuring setup and additional costs associated with it.	X	X		X	X	NPC	MOF	Traffic Police offices need to be equipped with speed measuring apparatus (fixed or mobile), next to road links where speeding is likely	Police only have a handful of speed guns at their disposal for speed limit enforcement.	DOR	Yearly	Report from Traffic Police representative to NRSC
4.15.5		Computer setup and internet connectivity are pre-requisites for the planned countrywide rollout of RAIMS and GPS vehicle tracking	X			X	X	NPC	MOF	Equipping all Traffic Police offices with basic computer setup and internet connectivity	Provided where RAIMS is being piloted.	DOTM	Yearly	Report from Traffic Police representative to NRSC
4.16	Scope out the responsibility of Traffic Police to Municipal Police for regulating vendors from pedestrian walkways.	Scoping out the responsibility to municipal police relieves traffic police of additional work burden and can effectively focus on other traffic management issues.	X	X	X	X	X	Traffic Police	Municipal Police	No vendors on pedestrian walkways except in sections specifically permitted by the municipality	Removal of vendors and other obstructions are subjected to the priority set by the commanding officer	TMO	Monthly	Spot checking
4.17	Strictly enforce the following existing legal provisions for safer road users:	Rigorous enforcement of existing legal tools through additional support of multiple stakeholders can help trigger safe road use behavior among road users.												
4.18	Ensure that vehicular traffic honor pedestrians' right on zebra crossings when being used (as per MVTMR § 132).	There is no point to paint zebra markings if vehicles do not stop at it when pedestrians cross the road.		X	X	X	X	Traffic Police	Transport operators, TMO	Continuous enforcement at zebra crossings for a month each year to help develop an involuntary reflex to stop.	Police officers give priority to vehicular traffic even when pedestrians are crossing the road on zebra crossings. The zebra crossing markings are not	DOTM	Yearly	Report from Traffic Police representative to NRSC

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
											periodically maintained.			
4.18.1	Ensure that pedestrians honor the right of vehicles on driving lanes (as per MVTMR § 136, 137).	Jaywalking prevents the vehicular traffic to maintain uniform cruising speed and increases the risk of road crashes		X	X	X	X	Traffic Police	Transport operators, TMO	Systematic improvement of footpath and road carriageway by clearing physical obstructions (eg: utility poles, tree stumps), removing vendors/ parked vehicles, surface improvement, and railing at intersections to encourage pedestrian to use the footpath.	Due to congested footpath and lack of pedestrian-friendly crossing facilities, pedestrians tend to spill on the roadway and are forced to cross the road from wherever they feel convenient or safe.	DOTM	Yearly	Report from Traffic Police representative to NRSC
4.18.2	Ensure nationwide erection of speed control sign and publish notice on speed zones		X	X			X	DOR	DOTM	Number of Speed signs installed	Traffic signs are not adequate in most of the roads.	Traffic Police	Yearly	GON Gazette, report from DOR representative to NRSC
4.18.3	Ensure the compulsory use of seat-belt by front-seat car passengers and the use of helmets by all motorcycle riders (as per MVTMA § 130).	Seatbelt protects vehicle riders from lurching dangerously forward when brakes are applied. Pillion riders are less aware of danger and thus need to protect their heads.	X	X		X	X	Traffic Police	TMO	Ban on car passengers without using seatbelts; Ban on motorcycle pillion riding without helmets; At the time of registration, the long-distance buses to require seat-belts on all seats.	Drivers of cars are required to use seatbelt; Motorcycle riders are required to wear helmets. Traffic Police have taken action against 50,969 drivers in the year 2018/19 for not using seatbelts. However, there have only been a few attempts for pillion riders to require helmets.	DOTM	Yearly	Report from Traffic Police representative to NRSC
4.19	Ensure availability of trained workforce for effective monitoring and implementation of the prevailing provision of VTMR § 140, 157, 158	Appointment/ deployment of Mobile Transport Inspectors	X	X		X		DOTM	TMO, Traffic Police	Appointment/ deployment of Mobile Transport Inspectors throughout the country	The legal provisions do not allow Traffic Police Officers to impose penalties higher than NPR 200 for a traffic offense. Even for many serious offenses, the Police Officers need to escalate the cases to DOTM or the corresponding TMO, causing unnecessary delays.	NRSC/PRSC	Yearly	Report from DOTM representative to NRSC
4.20	Real-time information on traffic condition and safety issues for the drivers through FM, mobile app, and SMS alerts at the provincial level.	The single FM broadcast from Kathmandu fails to cover other parts of the country while the traffic updates broadcasted for the valley are not in real-time. Consequently, drivers are not tuning to it and thereby sometimes missing important announcements (e.g., road closure).		X		X		Traffic Police	Municipalities	All Provincial Traffic Police Office to establish and maintain their FM stations or feed information to a local station.	Metropolitan Traffic Police Division broadcasts through their 0.5 kW FM. The detail of the information is often inadequate for the drivers to make travel decisions.	DOTM	Yearly	Report from Traffic Police representative to NRSC and TMO

Table 5: Monitoring Framework for Area V, Post-Crash Response

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S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
	District Hospital.													
5.3.1	Empowerment of the Ambulance Dispatch Center	The current practice in ambulance services is characterized by the need to contact ambulance service provider at their private number, negotiate fares, and the health facility to be taken. This results in considerable delays in transporting and handover of crash victims to medical staff/facilities. The center should be empowered to administer ambulances under diverse ownerships and temporarily function as the UFC until it is established.	X	X		X		MOHP	Provincial/District hospitals	Establishment of an ambulance dispatch center taking calls 24x7 at all District Hospitals to inform the ambulance stationed nearest to the requested location to attend and get the patient to the nearest suitable facility.	At present, the ambulance service providers may render or deny the service. There are also reports that the ambulances are paid by the costly private hospital to deliver the patients to them.	MOHP	Monthly	Report from National Ambulance Operation Coordination Committee
5.3.2	Establish an SOP for medical staff in the ambulance and the health facility receiving the patient.	The Ambulance Service Operation Guidelines 2073 lists the equipment and professionals for class A and B ambulance as well as the code of conduct for the ambulance driver. However, the protocol for medical staff in the ambulance and the health facility receiving the patient remain undefined.	X			X		MOHP	National Ambulance Operation Coordination Committee	National protocol established	The doctor/ paramedics, if any, in the ambulance and the health facility receiving the victims usually lack preparation.	MOHP	Once	Report from National Ambulance Operation Coordination Committee
5.3.3	Avail a mobile app to the general public showing the location of nearby ambulance dispatch centers, their contact details, and health facilities nearby	Such a mobile app may come very handy for road crash victims, drivers, conductors, and local rescuers.	X	X		X		National Ambulance Operation Coordination Committee	MOHP/Provincial Government	Develop and launch an ambulance tracking app	Difficult to locate ambulance in case of need as each needs to be contacted using private (often unknown) telephone numbers	MOHP	Once	Mobile application database, User experience survey
5.3.4	Facilitation and monitoring of service provided by ambulance owners to ensure ambulances are equipped with necessary equipment, medical supplies, and qualified personnel.	The District Ambulance Service Operation Committees need to monitor and facilitate them.	X	X	X	X	X	National Ambulance Operation Coordination Committee	MOHP, Provincial Government, Municipalities	Develop a monitoring and rewarding framework to monitor the number, frequency, and quality of the service every year.	At present, most of the ambulances in operable condition are either privately owned or belong to communities, and lack proper monitoring after registration.	NRSC	Yearly	Meeting with National Ambulance Operation Coordination Committee
5.3.5	Introduce a certified	Ambulance driver training is	X	X		X		National	MOHP, CTEVT,	Develop a short course covering	The present practice of	NRSC	Once	Meeting with

S.N.	Program										Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency			Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting		Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
	ambulance driver training	required as not everyone able to drive a vehicle is qualified to drive an ambulance.						Ambulance Operation Coordination Committee	Civil Societies		the protocol to be followed by ambulance drivers	learning on the job is not adequate to help the medical staff in attending the patient during embarkation, disembarkation and in the ambulance.			National Ambulance Operation Coordination Committee
5.4	Establish guidelines for air ambulance service through scheduled flights as well as emergency flights.	The National Ambulance Operation Coordination Committee is yet to devise the necessary guidelines.	X			X		MOHP	NRSC		Develop SOP for the rescue of road crash victims	Seats for trauma victims are recommended by the Chief District Officer. The chartered flights are generally arranged by crash victims' family members.	NRSC	Yearly	Meeting with N Ambulance Operation Coordination Committee members and MOHP representative to NRSC
5.5	Capacity building on trauma-care service														
5.5.1	Provide trauma-care training or relevant course to medical personnel in primary, secondary, and tertiary health facilities.	WHO (South East Asia Regional Office) has prepared a curriculum including trauma care for all medical students. It can be adopted and made a part of the standard medical curriculum.	X			X	X	MOEST	Academicia, Civil Societies, NMC		Trauma care a part of certificate and bachelor level education in clinical medicine and nursing	Trauma care is already a part of the standard medical curriculum. However, the depth of course needs to be improved to include multiple organ failure.	MOHP	Yearly	Meeting with NMC as well as MOEST representative to NRSC
5.5.2	Establish a Trauma registry	The present Health Management Information System (HMIS) does not record adequate details on trauma cases.	X			X	X	DOHS	MOHP, Pr		Trauma Registry to record details from identification of trauma cases to rehabilitation of victims established.	Only a few parameters are recorded in HMIS	MOHP	Yearly	Report from DOHS and all trauma care centers
5.6	Establish a network of trauma care facilities														
5.6.1	Ensure the primary function of the Level 1 Trauma Centre in Kathmandu remains care of trauma patients only.	The present practice of treating all type of patients may result in insufficient capacity in case of a real trauma event.	X			X	X	MOHP	Trauma hospital		Admission criteria to be developed and followed	Different medical and surgical cases are admitted in the hospital	NRSC	Once	Meeting with NMC as well as MOHP representative to NRSC
5.6.2	Develop Provincial Hospitals to Level II and Municipal Hospitals to Level III trauma care centers.	Relevant plans have been proposed in the Approach Paper for the 15th Plan.	X	X		X	X	MoSD, MOFAGA, MOHP	Provincial/District Hospitals; Municipalities		Select hospitals such that a trauma care facility is available at 50km in the hills and 100km in the plains (or at 1.25 hour driving distance).	The former Zonal Hospitals upgraded to Provincial Hospitals have the corresponding capacity to treat trauma cases.	NRSC	Once	Meeting with NMC as well as MOHP representative to NRSC
5.6.3	Identify hospitals for	National Health Sector	X	X		X	X	MOHP	Provincial/ District		Select hospitals near major	Location of hospital, in	NRSC	Once	Meeting with

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S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
	Safety Councils at federal, provincial, and municipal (metropolitan/ sub-metropolitan) levels through law.	required to coordinate the agencies working in road safety in all levels of government i.e., Federal, Provincial, and Local.												
5.12.1			X	X	X		X	MOPIT	MOLJPA, MOIALs, MOPIDs,	RSC at the federal level will be established with adequate budget, human resources, and other necessary logistics for day to day operations.	An ad-hoc road safety council has been formed through a Formation and Operation Guidelines by the Council of Ministers.	NRSC	Once	GoN Gazette
5.12.2			X	X		X		MOPIDs	MOLJPA, MOIALs, MOPIDs,	RSC will be established in all provinces with adequate budgets, human resources, and other necessary logistics for day to day operations.	No	Provincial RSC	Once a year	GoN Gazette
5.12.3			X	X	X	X		Provincial RSC	MOLJPA, MOIALs, MOPIDs,	Road Safety Unit will be established in metropolitan/ sub-metropolitans	No	Provincial RSC	Once a year	Annual report of municipalities
5.13	Update National Road Safety Action Plan for covering the period 2021 to 2030	The earlier plan prepared in 2013 has already expired in 2020. Also, the structure of the state has changed after the promulgation of the new constitution in 2015. Thus, the existing plan needs to be updated considering the new target established by the United Nation for the period 2021 to 2030 and changed federal structure of the country.	X	X	X	X		MoPIT	Agencies representing NRSC at the federal level, MOPIDs at the provincial level and Municipalities at the local level	RSAP will be updated.	MoPIT had published the Nepal Road Safety Action Plan (NRSAP 2013-2020) in 2013.	MoPIT	Once a year	Annual report of MOPIT
5.14	Develop and periodically update plan to invest in road safety at Federal, Provincial, and Municipal levels.	An investment plan supporting the activities planned in the RSAP and a budget prioritization framework would help achieve the goal of reducing the number and severity of road crashes.												
5.14.1			X	X		X		NRSC	NPC, MOFRBN, MoPIDs	Establishment of a separate and dedicated unit on road safety within each agency working on road safety.	In the past, a system was established at TESU (DOR) in 1997.	NRSC/PRSC	Yearly	Report from corresponding representatives to NRSC
5.14.2			X	X	X	X	X	Provincial RSC	NPC, MOF, MoPIDs, TMO	Allocation of an adequate budget by all the concerned agencies for road safety activities	Not established	MOPIDs	Yearly	Budget Allocation Book (Red Book)
5.14.3			X	X	X	X		NRSC	NPC, PPC, MOF,	Establishment mechanisms for	Not established	NPC	Yearly	Report from

S.N.	Program										Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency			Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source	
									MoFALD, RBN, MoPIDs, MUAN	efficient and strategic resource allocation across safety programs				corresponding representatives to NRSC	
5.14.4			X	X	X	X		MOF	NPC, MoPIDs, MUAN	Sustainable funding mechanisms will be established by law for carrying out road safety activities.	Not established	NRSC	Once	GoN Gazette	
5.14.5			X			X		MOF	Provincial RSC, MoPIDs, MUAN	Necessary policy/guidelines will be developed and implemented to ensure private funding on road safety through the PPP model.	Not established	NRSC	Once	GoN Gazette	
5.14.6			X	X	X	X	X	MOF	NPC, MOF, MoFALD, MoUD, RBN, MoPIDs, MUAN, FNCCI	Identifying and implementing innovative funding mechanisms, such as central matching funds for road safety interventions at the provincial levels.	A Road Safety Fund would be set up once the Road Safety Bill is ratified.	NRSC	Yearly	GON Gazette	
5.15	Facilitate for the establishment of Centre of Excellence on road safety at Federal and Provincial levels for developing sustainable institutional base on road safety expertise in the country.	The main purpose of the center is to support Government agencies (Federal, Provincial, and Local Level) and other stakeholders for the benefit of reducing road trauma in the nation with: designing training materials, conducting case studies, preparing and publishing best practice book, conducting action research, developing different types of standard and guideline and linking with the international research community.													
5.15.1			X			X		NRSC/PRSC	National and Provincial RSC, Engineering Council, Medical Council, Universities	Number of Centers established at Federal and Provincial levels	Tribhuvan University has developed course curricula on road safety covering both at bachelor and master level of education in engineering	NRSC/PRSC	Yearly	Annual report of NRSC/PRSC	
5.15.2			X	X	X	X	X	Centre of Excellence	RBN, DOR, DoLI, Private Sector, International Development Partners, NGO	Number of training/case studies/research activities conducted by those centers.	On average, facilitate at least five research per year on road safety topics as a part of university thesis at Tribhuvan, Paschimanchal and Purvanchal Universities	NRSC/PRSC	Yearly	Annual report of Centre of Excellence	
5.15.3			X			X	X	Centre of	RBN, DOR, DoLI,	Promote relevant research-based	Some technical notes on	NRSC/PRSC	Yearly	Annual report of	

S.N.	Program									Monitoring				
	Activity		Government Level			Execution Period		Responsible Agency		Target Setting		Monitoring Framework		
	Action	Clarification	Federal	Provincial	Local	15th	16th	Leading	Supporting	Performance Target/ Indicators	Baseline	Responsibility	Frequency	Data Source
								Excellence	Private Sector, International Development Partners, NGO	publications, e.g.,: (i) crash reduction factors in Nepalese roads; (ii) Cost of road crashes; (iii) vehicle-kilometer survey; (iv) Update design standards for SRN/ non-SRN roads based on the global safety practices	road safety were developed and published by DOR/TESU in the nineties.			Centre of Excellence
5.16	Establish a system to investigate severe road crashes													
5.16.1		Usually road crashes are a result of a number of factors which the Traffic Police cannot comprehend.	X			X	X	NRSC	Traffic Police, DOR, DOTM, TMO, DAO, MOHP	Multi-casualty road crashes are investigated by a multi-disciplinary team of experts.	Often investigation of road crashes are done by a single police constable. Consequently, the truse cause of the crash and consequent policy interventions to prevent similar crashes have been difficult to determine.	NRSC	Once	Annual report of NRSC.
5.16.2		A modality for road crash investigation to be developed through piloting	X			X		NRSC	Traffic Police, DOR, DOTM, TMO, DAO, MOHP	A list of expertise for the investigation, SOP and scope of investigation, along with logistical suport required by the investigators to be developed through piloting of possible alternatives.	A list of possible experts being drawn.	NRSC	Once	Annual report of NRSC.

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