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FINAL VERSION

WHITE PAPER 2017/2018

ON ROAD TRAFFIC SAFETY IN MONGOLIA

Ulaanbaatar, 2018

CONTENT

INTRODUCTION

This Road Safety White Paper has been developed with the objective of serving as a tool, and justification, for the Government of Mongolia to use in its continued effort towards improving the road safety environment in Mongolia.

This White Paper provides a look at international best practice in road safety and accounts for the current road safety situation in Mongolia, within the framework of the 5 pillars of the UN Decade of Action for Road Safety. It further details the crash trends and road safety challenges that Mongolia is facing and includes a series of recommendations for implementing changes.

The findings of the White Paper along with the recommendations will provide the point of departure for the reviewing and updating the existing National Strategy on Traffic Safety (2012), together with reviewing and updating the latest Action Plan for implementation (2017).

These two documents, along with the White Paper, will provide the Mongolian road authorities with a tangible path towards a stronger institutional environment for supporting and leading the way in the process of improving road safety in Mongolia.

CURRENT TRAFFIC SAFETY SITUATION IN MONGOLIA

Road Network

The sheer vastness of Mongolia challenges the road network and the safety of those networks. Covering an area of approximately 1.6 million square kilometers Mongolia is the 19th largest state in the world, measured by area. The general road infrastructure in Mongolia is under-developed, which contributes to creating challenges in traffic and road safety areas. The road network encompasses about 12,700 km of state road, 36,000 km of local province and municipal roads, and some 600km of roads dedicated for mining. Of that, only about 5,500 km are paved and most roads either consist of gravel, improved soil surface, or earth tracks without proper alignment.

The state road network includes three Central Asia Regional Economic Cooperation (CAREC) corridors, which connect the Russian Federation to East Asia via Mongolia and People's Republic of China. The corridors in question are the 4A Corridor (Yarant-Hovd-Tsagaanuur), 4B Corridor (Altabulag-Ulaanbaatar-Zamyn Uud), and 4C Corridor (Ondorhaan-Baruun Urt-Bichigt). The CAREC Corridors facilitate Mongolia's trade environment, transport efficiency, and encourages economic cooperation by connecting the surrounding countries. The Government of Mongolia is at present focusing efforts on completing the construction of paved roads from the capital city of Ulaanbaatar to the main province centers, and thereafter on constructing and paving the whole state road network.

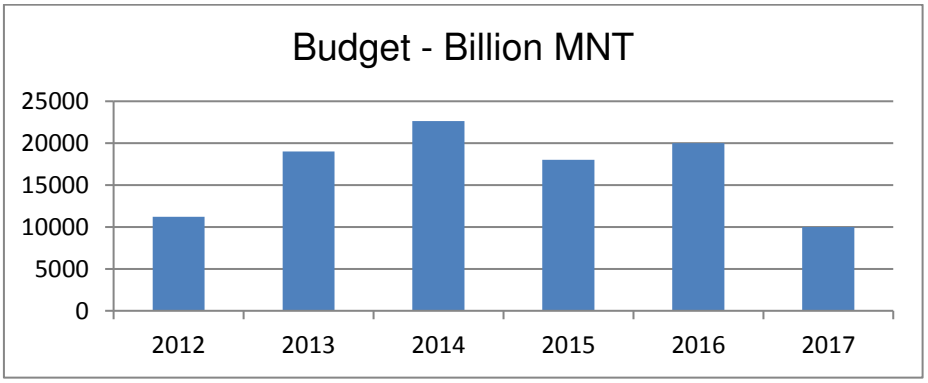
Figure 1: Road Network of Mongolia

Source: MRTD

The combination of a large geographical area and a relatively small population, estimated at around 3 million inhabitants, results in very low traffic volumes outside of the greater Ulaanbaatar area, with the main exception of the Ulaanbaatar-Darkhan-Erdenet road sections. The CAREC 4B section between Ulaanbaatar and Nalaikh is heavily congested and not adequate for the present traffic volumes. The Ulaanbaatar-Darkhan section of the Corridor is in sub-standard condition and in need of rehabilitation and road safety improvements. Due to insufficient budgets a large buildup of periodic maintenance and rehabilitation has been accumulated, putting increased pressure on the transport sector budget.

In Mongolia only approximately 0.1% of GDP is allocated for road maintenance, and in 2017 the Government allocated 4.7% of the state budget for the transport sector. It has been noted that there is a concern that periodic preventive maintenance of the road network is being replaced by more capital-intensive reconstruction and rehabilitation projects, hence resulting in a build-neglect-rebuild cycle. Rehabilitation and reconstruction is more costly than regular preventive maintenance, and not only affects Government budgets and efforts, but also the safety of the roads which is significantly reduced when the roads are in bad condition and not maintained on a regular basis.

Figure 2: Budget allocated for repair and maintenance of roads in Mongolia



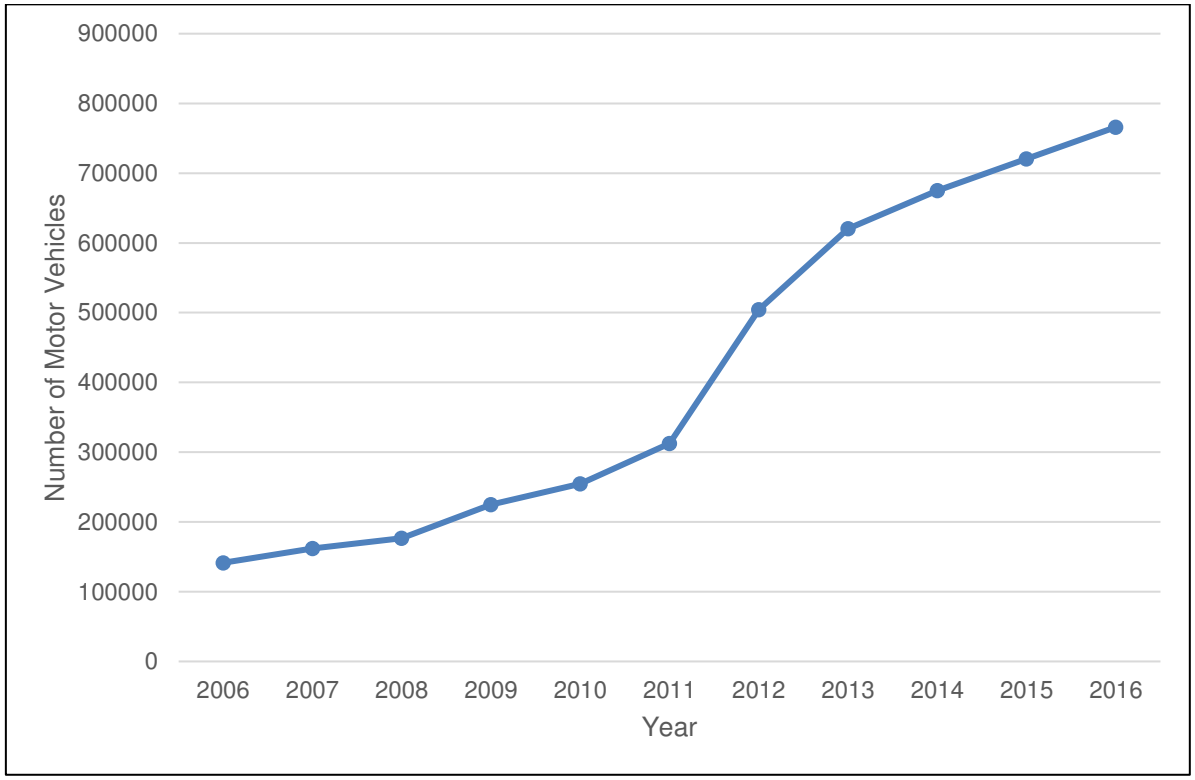
Source: MRTD

The budget of the Ministry of Road and Transport Development (MRTD) for road maintenance has been shifting over the last couple of years, with 2017 being the lowest funding period with only 10 billion MNT allocated (about $4 million equivalent). While capital expenditure funding previously has been provided through the Development Bank of Mongolia (53%), international donors (39%), and the state budget (8%), it is expected this will decrease in the future, and it has been agreed that maintenance of the existing road network is now a priority.

Vehicles

The vehicle fleet in Mongolia has increased steadily over the past decade, with particular growth in the last 5 years as can be seen in the figure below:

Figure 3: Number of registered motor vehicles in Mongolia



Source: MRTD

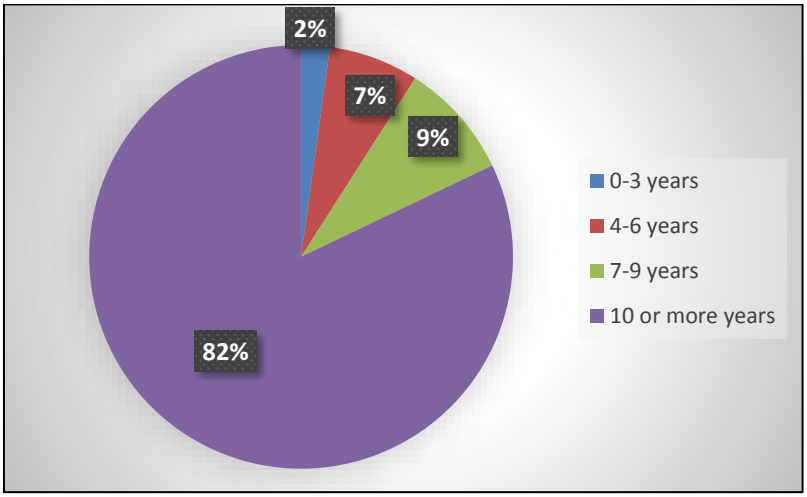
Motor vehicles include passenger cars, trucks, buses, and tank trucks[1] but not motorbikes and trailers (full historic numbers included in Annex A). Vehicle ownership per capita is at its highest with current numbers at 1 motor vehicle per 3 adults. Most vehicles on the roads of Mongolia are mainly passenger vehicles (65%) followed by trucks (20.9%), motorbikes (5.1%), and finally buses/public transportation making up only 0.8% of the vehicle fleet. What is seen here is that personal transport is heavily favored over public transport. Public transport in Mongolia is limited and is especially challenged in Ulaanbaatar, where the transport services and infrastructure are in bad condition and severely affected by congestion. Investments (and lack thereof) in transport services and infrastructure are out of pace with the rapid development and growth of the city and its transport demands. As a consequence, public transport is generally unreliable, overcrowded, slow, and often unsafe (poorly maintained vehicles, unsafe access and exit).

[1] Tank trucks is a term used to describe trucks with a tank body, suitable for transporting gases or liquids.

In Mongolia right-hand traffic is observed, meaning that unless otherwise indicated, drivers should keep to the right side of the road. In such a configuration, cars should have the steering wheel on the left side to properly navigate the road network and traffic environment. However, in Mongolia approximately half of all registered vehicles have the steering wheel on the right side (51.7%). This is due to the fact that the majority of vehicles in Mongolia are imported from Japan, where left-hand traffic is observed, and from Korea, where right-hand traffic is observed. There are currently no direct legal or financial consequences for importing and using vehicles that do not comply with the traffic practice observed in Mongolia.

Looking at the age and condition of the growing vehicle fleet another trend becomes apparent. The vast majority of registered motor vehicles in Mongolia have been used more than 10 years (82.2%), while newer cars (used 0-3 years) only make up 2.2 % of the vehicle fleet:

Figure 4: Motor Vehicle Age Distribution



Source: MRTD

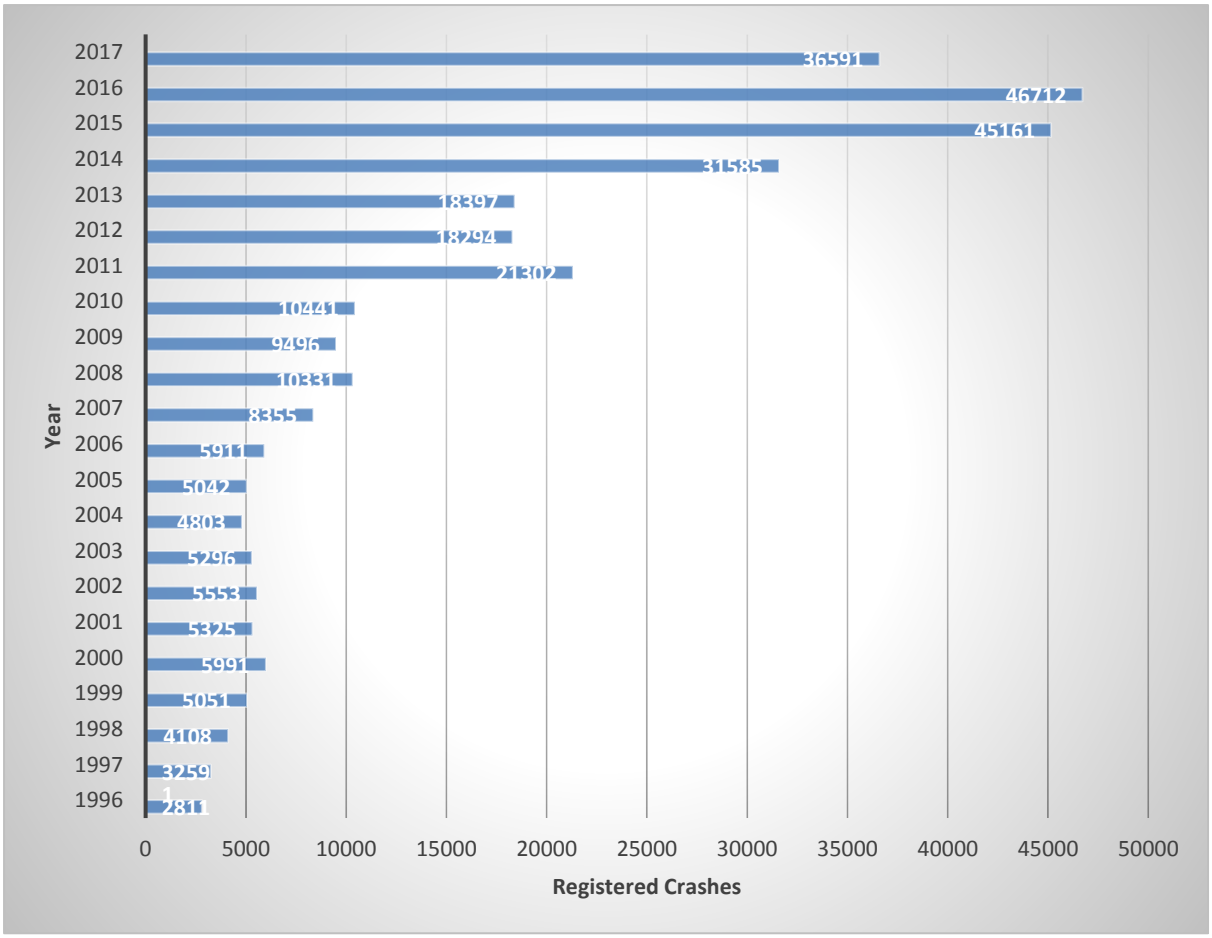
An old and aging vehicle fleet is an important consideration from a road safety perspective, as old vehicles are more likely to present safety challenges, especially if not properly maintained or regularly inspected. The vehicle may still function sufficiently to use, but can have unseen safety issues on tires, brakes or other internal systems. This is especially a relevant consideration in a context where vehicle inspection systems are inadequately covering the vehicle fleet and providing regular inspections of well-defined standards.

Crash Data and Trends

In Mongolia, the road rule defines a “crash” to mean a crash caused by road traffic which caused harm to human life and health, breakdown of vehicles and road facilities, damage to goods and other material loads. While total registered traffic crashes in the last 2 decades has

been low, a clear increase can be seen in recent years, which could be linked to the growth in the vehicle fleet during this period.

Figure 5: Registered crashes in Mongolia, 1997-2017



Source: MRTD

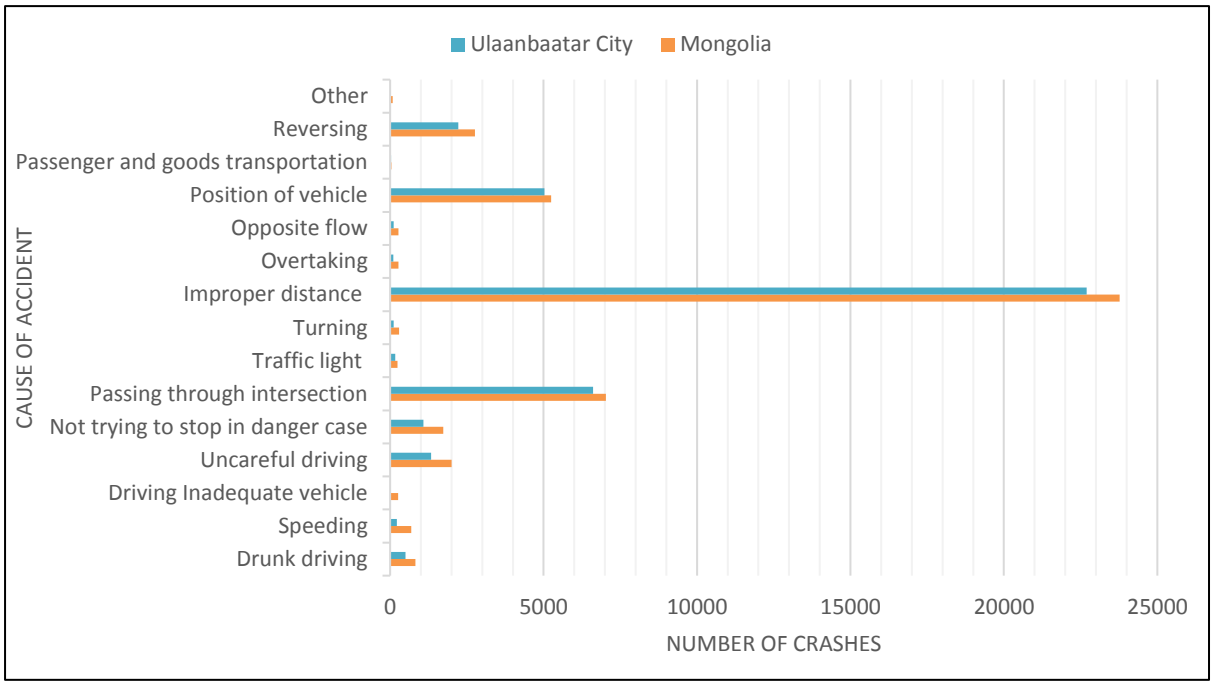
Much available road crash data and statistic differentiates between *regular crashes* and *crimes against road safety*, and most crash data available in Mongolia filters out the fatalities caused by a crime against road safety. This provides a skewed perception of the road safety situation and challenges addressing the *real* factors that influence road safety in Mongolia.

This division between crash and crime exemplifies the way road safety is currently addressed in Mongolia, where a significant amount of focus is put on finding the “guilty” part in a given crash. This is also reflected in the crash data available, which places less emphasis on the circumstances around the crash such as vehicle condition, cause, and contributing factors. A translated copy of a crash reporting form is included in Annex B.

With this in mind, a closer look at the crash data reflects the notion of the guilty part in the way crash data is registered. Reasons for traffic causes are in 97.4% of the cases recorded in 2016

due to *drivers fail*, with only 2.5% by *pedestrian fail* and 0.1% by *road environment*. No crashes caused by vehicle fail are registered. Hence, by this classification almost all collisions in Mongolia are caused by the driver. Paragraph 1.5 of the Rules of the Road of Mongolia appears to be the main reason for the classification, stating that "*Road users should travel without causing a danger and harm to others as well as obstacles, difficulties and dangerous situations for traffic*". In the following table, the crashes caused by driver's fail are further divided down:

Figure 6: Reasons for crash caused by driver's fail



Source: MRTD

According to the current reporting and data collected, most collisions appear to be caused by "improper distance", followed by "passing through intersections". Speeding only accounts for 0.5% of crashes in Ulaanbaatar, and for 1.5% in Mongolia, while drunk driving causes 1.8% of crashes in Mongolia, and 1.2% in Ulaanbaatar.

While the numbers for speeding and drunk driving are not alarmingly big, it is hypothesized that they are the main cause of fatalities and serious injuries, given the nature of such crashes. Looking further at total crash numbers registered in Mongolia:

Figure 7: Crashes Recorded by the Police (2015 and 2016)

Year	**Crashes**		
	Rural areas:	Ulaanbaatar city:	**Total**:
2015	3774	41387	45161

2016	5337	41375	45712
2017	3929	32662	36591

Source: MRTD

From the numbers above, it becomes apparent that while there is not much difference between the numbers in the two years, the big difference can be seen in the proportion of crashes taking place in Ulaanbaatar (91%). While that is a fairly high percentage, it has to be considered that more than half the population of Mongolia lives in Ulaanbaatar, and that access and ease of reporting is most likely better in Ulaanbaatar than in the countryside. Of these crashes, 479 were fatalities. However, of these fatalities 73% occur in rural areas and only 27% in Ulaanbaatar city. Hence while there is a relatively low crash volume in rural areas it is very often with a fatal outcome. It is known that the national speed limit for rural roads is set nationally at 80 km/h, and this is very reasonable and appropriate. However, due to the very long distances between towns, it is probable that many crashes are caused, worsened, or aggravated by a driver travelling at excessively high speeds. Several contributing factors might affect the high fatality rate in rural areas:

- After the collision, it may be a long time before another vehicle arrives to give assistance or call for help;
- There may be no cell phone coverage so it may take a long time for help to be called;
- It may take a long time before Emergency services arrive at the location;
- It can take a long time to transport the injured to medical facilities.

Looking closer at available data reveals that there are 2 common scenarios resulting in serious or fatal collisions in rural areas:

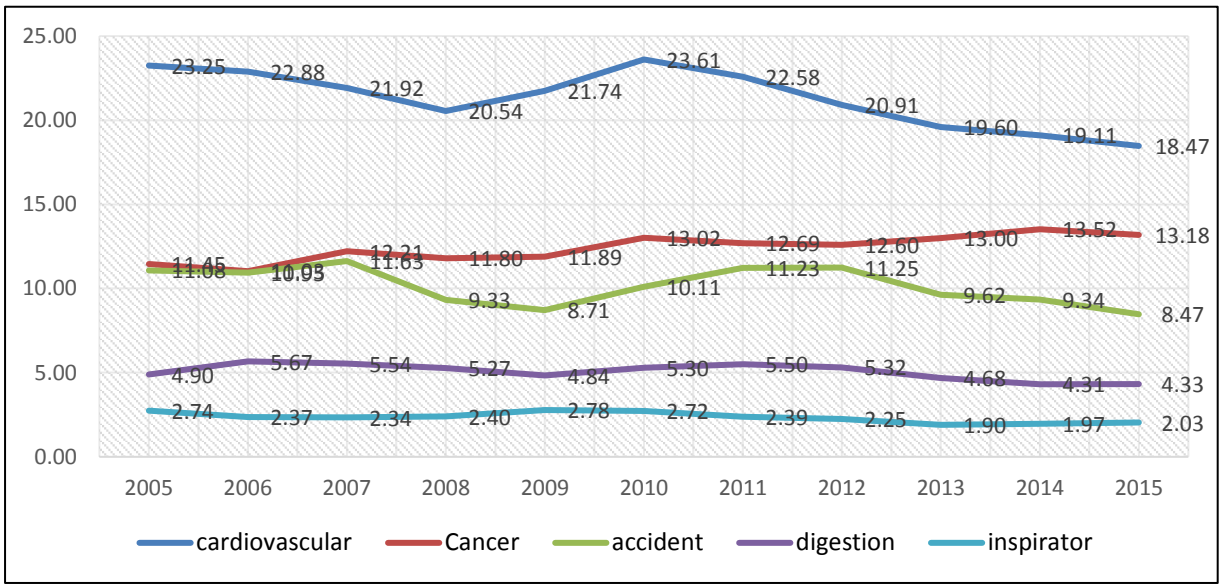
- Head-on collisions with another motor vehicle, typically during overtaking.
- Driver drowsiness due to long distances, leading to leaving the road and rollover.

Approximately half the registered vehicles have the steering wheel on the right, whereas in Mongolia it should be on the left. The primary reason for requiring the steering wheel on the left in Mongolia is so a driver may easily see past a vehicle ahead for the purpose of overtaking. In cases where the steering wheel is on the right, this makes overtaking a very dangerous maneuver, and may be the primary causation factor for many of the head-on fatal collisions. However, the available crash statistics do not account for the numbers of vehicles having right-hand steering being involved in (causing) head-on collisions.

In Ulaanbaatar city, vehicle travel speed (and hence impact speed), is likely to be lower than in rural areas, i.e. due to congestion, traffic, and shorter distances, while in addition, the close proximity of medical assistance means a seriously injured person is less likely to die as the result of a collision in Ulaanbaatar.

Historically, accident fatalities (e.g. road crashes, falls, equipment-related accidents, etc.) figure as the 3rd cause of death in Mongolia between 2000 and 2015 consistently, according to figures from the Public Health Institute:

Figure 8: Cause of death, Mongolia 2000-2015



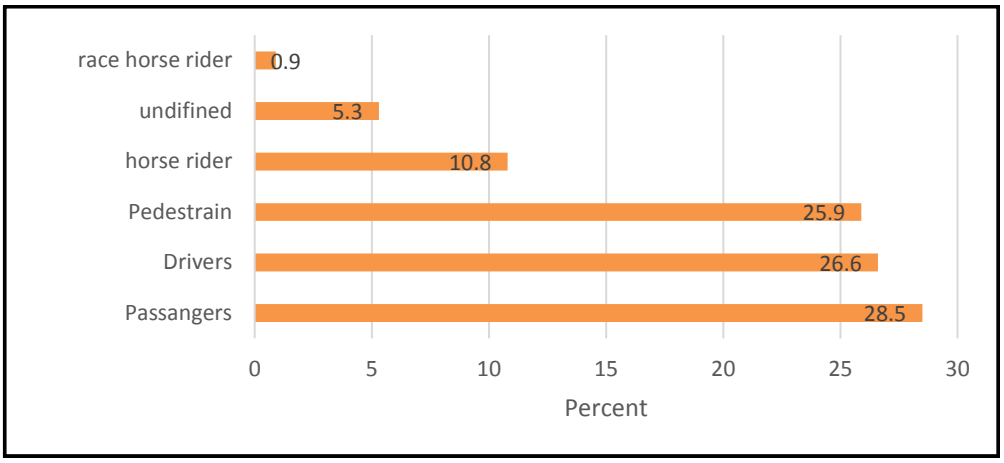
Source: MRTD

While accidents are the 3th cause of death in Mongolia, injuries as a result of a traffic crash is the second cause of injuries:

- Falling (36.3%)
- Traffic crash (16%)
- Violence (15.7%)
- Equipment or tool-related (14.5%)
- Animal-inflicted injuries (7.7%)

The victims of traffic crashes are spread relatively evenly between mainly passengers, drivers, and pedestrians:

Figure 9: Injured road users from traffic crashes



Source: MRTD

Looking at this data, one can deduct that actions for improving road safety needs to target both drivers as well as pedestrians in order to combat the rising number of car crashes.

Black Spots

Black spots, or crash clusters, can help provide a more nuanced picture of where targeted action is needed to reduce crashes. Black spots can generally be defined as an o*ver frequency of crashes at any given location* and occur on both highways as well as in cities, or in a particular intersection.

In Mongolia, black spots are not given dedicated attention at the moment. Current procedure is that based on the collected crash data from the Traffic Police reporting, the Traffic Police identifies areas where many crashes occur. However, police reporting is often limited to crashes in which fatalities were recorded and not injuries and hence may be inadequate for this purpose. No action is currently being taken to remedy the identified and affected black spot areas, nor to further investigate the underlying causes for *why* the frequency of crashes are higher in these locations. Looking at these problem areas identified by the Traffic Police, it is evident that intersections play a major role, as demonstrated by the data below from the Bayanzurkh District of Ulaanbaatar:

Figure 10: Crash clusters in Bayanzurkh District, 2016 (MRTD)

No	Roads	Number of registered crashes	Percent in total number	Roads:				
				intersection	direct to West	direct to East	direct to North	direct to South
1	Intersection of “zuun dorvon zam”	930	10	177	69	192	93	51
2	Intersection of hospital for contagious disease	708	7.6	153	114	63	85	28
3	Intersection of market “Tsaiz”	639	6.9	148	73	130	20	29

4	Intersection of "Dunjingarav"	548	5.9	151	121	27	11	33
5	Intersection of "SCSM"	530	5.7	168	27	99	15	23
6	Intersection of Officers	524	5.6	157	61	51	35	24
7	Intersection to direct "Dari-Ekh"	518	5.6	128	26	48	103	19
8	Intersection of "Chuluun ovoo"	457	4.9	121	29	109	15	12
9	Intersection west side of market "Naran Tuul"	422	4.5	118	63	3	29	21
10	Intersection of "Bohiin orgoo"	375	4	124	8	32	13	58

Out of all the problem areas identified (50 in total for Ulaanbaatar city), only 3 are not in intersections (the complete overview of identified crash clusters in Ulaanbaatar and rural areas can be found in Annex C).

In sum, from the above reviewed crash data a picture emerges that shows a number of challenges to the general road safety of the Mongolian road network. Total numbers of registered crashes have risen significantly in the last few years. More vehicles than ever are on the roads of Mongolia – roads that are not sufficiently maintained and vehicles that are predominantly more than 10 years old. Most crashes occur in Ulaanbaatar city but are much less likely to be fatal, compared to crashes in the rural regions of Mongolia. Almost all crashes appear to be caused by some type of driver fail, while almost no crashes are caused by the road environment. Improper distance and intersection crossings account for the largest volumes of crashes. A significant number of intersections have been identified as containing an over frequency of crashes (black spots), but at present action in these areas is not a priority. Speed and drunk driving are hypothesized to be main causes of fatal crashes, or a strong contributing factor.

Crash data and trends to provide only one aspect of the current road safety situation – the following sections of this White Paper will account for the underlying aspects of road safety in Mongolia and hold it up against international best practice, using the United Nations' (UN) Decade of Action for Road Safety 2011-2020 (the Decade of Action) as the guiding framework. Doing so allows the identification of areas in need of improvement and will result in a series of recommendations for policy adaptation.

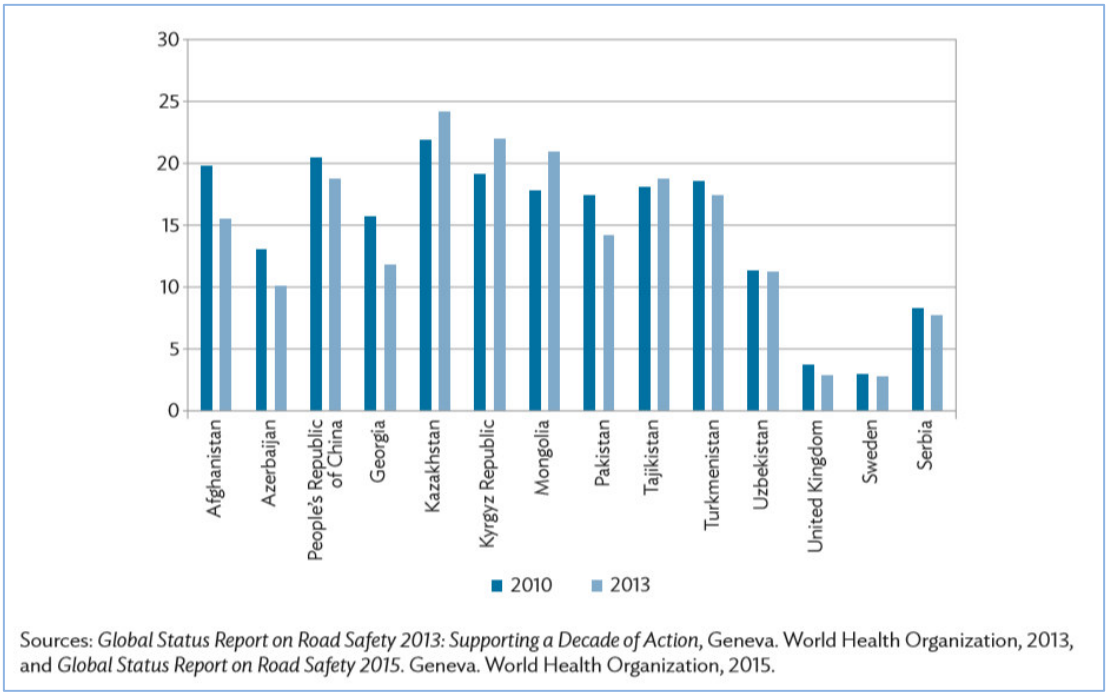
CAREC – Regional Road Safety Initiatives and Considerations

The CAREC Program has been established as a partnership of 11 countries and 6 multilateral development partners, with the goal of promoting and supporting cooperative development to accelerate economic growth and reduce poverty. In addition to Mongolia, the CAREC

countries consist of Afghanistan, Azerbaijan, Georgia, China, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan. The cooperation is centered around 6 main transport corridors, where the CARES members are focusing on areas such as transport, trade facilitation, trade policy and energy. It total the CAREC corridors cover approximately 29,350 km of roads, linking key economic hubs of the region and linking the countries to other global markets.

A key component of the transport element is road safety, which is highlighted in the CAREC Transport and Trade Facilitation Strategy 2020 (TTFS 2020) as an area where economic and social benefits will arise as a consequence of improvement efforts. The CAREC Road Safety Strategy has been elaborated for the purpose of improving efforts in the area of road safety across the corridors, as crash rates in CAREC countries generally are four times those of countries with more elaborate road safety practices (insert footnote). A number of common characteristics and causes have been identified across the CAREC countries, according to the CAREC Road Safety Strategy: Speeding is generally considered a significant factor in road crashes on the corridors and seat belt usage is low (especially for passengers). In combination, these two factors contribute significantly to the relatively high number of crash-related fatalities and serious injuries in the CAREC countries. This scenario is confirmed in the case of Mongolia, where speeding is considered a leading cause of road crashes and seat belt wearing rates are generally considered between 10-20 %. Comparing to its CAREC member countries, Mongolia ranks amount the top in terms of road-related deaths, only surpassed by Kazakhstan.

Figure 11: Estimated Road Traffic Death Rates in CAREC Countries, Serbia, Sweden, and the United Kingdom, 2010 and 2013 (per 100,000 population) and the Kyrgyz Republic:



Sources: *Global Status Report on Road Safety 2013: Supporting a Decade of Action*, Geneva. World Health Organization, 2013, and *Global Status Report on Road Safety 2015*. Geneva. World Health Organization, 2015.

Source: CAREC "Safely Connected", 2016

Another common factor is lower-quality road design, construction, and maintenance. Among others, this include poor road surfaces, insufficient road signage and markings, poor traffic control and safety during road work. In Mongolia, this factor is another clear case. Of the approximately 50.000 km of roads in Mongolia, only about 5500 km are paved, with most roads consisting of gravel or similar. Adding to this is a severe lack of maintenance on the existing road network, both periodic maintenance as well as rehabilitation. Especially periodic maintenance tends to be down-prioritized in favor of more capital intense reconstruction projects, as described in Introduction chapter of this paper (White Paper).

Crashes involving poorly maintained vehicles, manufactured to low standards and not necessarily with the steering when in the correct position are also common across the CAREC countries. Limited regulation on vehicle import and improper vehicle inspection systems are contributing factors to that. For Mongolia, that is also a case in point. The vehicle fleet has been growing steadily and continues to do so, vehicle ownership is at its highest, and more than 82% of the vehicles in the road network are more than 10 years old. The existing inspection system capacity is insufficient for the current size of the growing vehicle fleet – for vehicles more than 2 years old inspections are required to be carried out annually, but given that only about 2% of the vehicle fleet is newer than two years, there is a big pressure and demand on the inspection centers in Mongolia. As a result, it is hypothesized that many of the older vehicles operating on the road network are unsafe and pose a danger to both occupants and other road users.

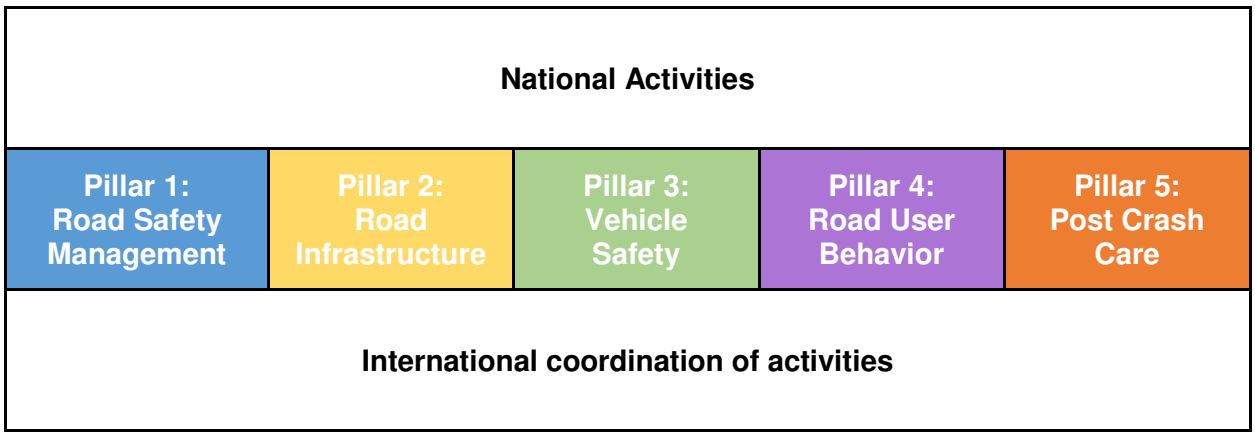
Generally, the picture emerging from the common causes and characteristics for the CAREC countries are also reflected in the context of Mongolian road safety challenges. While there is a national road safety strategy and action plan in place for Mongolia, funding and implementation capacity remains a challenge.

UN DECADE OF ACTION FOR ROAD SAFETY – THE 5 PILLAR FRAMEWORK

The Decade of Action was introduced by the UN General Assembly in 2010. The overall objective of the Decade of Action is to stabilize and then reduce the forecast level of road traffic deaths around the world by 2020. The accompanying UN resolution 64/255, "Improving Global Road Safety", requested member states to commit to take the necessary steps to increase road safety in their countries, and provided a structured process for doing so. Providing an opportunity to address road safety in a coordinated manner, the Decade of Action allows for long-term planning along with activities that support regional, national and local road safety at the same time. It calls for national targets and strategies, local ownership, as well as collaboration across various agencies and sectors (transport, health, police, justice, urban planning etc.) along with non-governmental organizations, civil society and the private sector.

The Decade of Action introduced a structured and focused framework for addressing road safety issues and interventions that could be adapted by any country and implemented in a way that provided said countries with tangible result of their efforts. In this way, the invested capital in combating the rise of road fatalities could be measured saved lives against spend dollar.

More specifically, the Decade of Action has been structured in 5 pillars; each pillar provides specific targets and actions to be implemented and measured and calls for action at both national and international level. The 5 pillars combined provide the basic foundation of road safety, and consist of:



In Mongolia, there was backing for the Decade of Action and its goals from very early on. A resolution (number 146) by the Government of Mongolian made in the beginning of 2012

decrees to follow and implement the UN resolution 64/255 by introducing a National Traffic Safety Strategy and Supporting Action Plan. It sets out the goal to reduce the number of traffic fatalities and seriously injured by 50% between 2012 and 2020. The strategy and action plan are designed on the 5-pillar framework and provide guidelines for obtaining the reduction goal, along with a number of strategic implementation indicators, and their 2012-baseline levels and 2020-desired levels.

In order to integrate the concept of the 'Safe System Approach' into daily operations by the Traffic Police, the MRTD and other key-stakeholders a real understanding and possible guiding process may be required. For the Traffic Police explicit a data driven process is needed. The introduction of the new database along with a different approach to data recording should lead to a possible change in this. The current situation where all responsibility for a road crash is laid upon the driver encourage higher fines, but does not solve the underlying problems Mongolia clearly have with road safety and disproportional high number of crashes.

The following sections will account for the content of the 5 pillars of the Decade of Action in relation to international best practice and how that relates to the current situation in Mongolia. For each of the 5 Pillars recommendations for actions for Mongolia are specified.

Pillar 1 – Road Safety Management

The first pillar in the Decade of Action focuses on data collection and evidential research, as a means to provide the foundation for adapting appropriate road safety measures and instruments, in progressing road safety improvements. Furthermore, it puts emphasis on strengthening institutional capacity in combination with coordinated multi-sector efforts in developing a national road safety strategy, containing specific national plans and targets.

The understanding of road safety is constantly improving, as road safety has increasingly been put on the agenda in both developed and developing countries around the globe. With more focus comes more accumulated experience and knowledge, which leads to an improved understanding of the complexities of road safety and the development of new methods and tools.

Historically in road safety understanding and management, the approach has been to place the blame mainly on the road user for behavioral mistakes that result in a crash. A more recent and modern approach takes its point of departure in the Swedish Vision Zero-model, which is centered on creating a road network with no fatalities or seriously injured as a result of a traffic crash. Contrasting most other approaches, the Vision Zero is not focused on particular goals but instead on an ethical notion that the loss of a life or becoming seriously injured as the result of a traffic crash is never acceptable. It is no longer just about reducing the number of crashes that occur on the roads but instead focus on the human impact of such crashes and how these can be reduced.

This shift in approach, putting the human cost at the center, has led to further development in the concepts and understandings that guide road safety actions and initiatives. Specifically it has resulted in the commonly-used *Safe System Approach*, which is based on the experiences of Sweden and the Nederland in particular, along with the thinking behind the 5-pillar Decade of Action. Much like the Vision Zero, the Safe System Approach aims at ensuring that, in the event of a crash, the impact forces released are within the boundaries of human tolerance and that no fatalities or serious injuries resulting in life-long disabilities will occur.

Applying the Safe System Approach in a road safety management perspective is centered on the following understanding:

1. Human errors have to be accepted;
2. Road crashes cannot be totally avoided;
3. Hence, the goal is to minimize human suffering in road crashes.

Therefore, a number of principles are used in the application of the Safe System Approach from a management perspective, namely:

I. The roads have to be designed for all road users;
II. A clear, consistent, and self-explanatory message should be provided in the road environment;
III. Encourage adequate speed and behavior through the road design;
IV. Reduce potential conflict points between various road users groups; and
V. Design “forgiving” roads and transport networks.

Example of a road side treatment, which turns a potentially fatal road side crash into a crash that results in minimal human injury (left – before, right – after):

Figure 12: “Forgiving” road side treatment example

In order to be successful with this approach it relies mainly on leadership and political will to fund safety interventions in a systematic manner. It also depends on the designers and operators of the road transport system to control and manage the kinetic energy within the system, and to recognize the cognitive and perceptual capacities of road users. The Safe System Approach also requires that people, as users of the road transport system, will be unimpaired and will be able to respond appropriately to road situations and comply with key road rules. The principal tasks of the Safe System Approach therefore are to manage vehicles, road infrastructure, and speeds within the capabilities of road users who act reasonably without impairment, and to facilitate the safest interaction between these components. If this

is done successfully, then it will then ensure that when traffic crashes do occur, then all crash energies will remain at levels that minimize the probability of death or serious injury.

The concepts of the Safe System Approach is to some degree reflected in the road safety understanding that guides activities in Mongolia. The National Traffic Safety Strategy (2012) and the supporting Action Plan (2012, updated 2017) for implementing the strategy are the primary foundation of the Mongolian road safety thinking. Therefore, this White Paper is based on those documents. The strategy mentions that to date (2012) the road safety efforts have been guided by a perception that traffic safety is the responsibility of traffic regulators and the driver (road user) but that in recent times a more modern approach has emerged, that sees road safety as something more comprehensive and includes a "Man-Transport-Road-Environment" approach. However, there is still a strong tendency to see road safety from a criminal perspective, measuring crimes and violations against road safety, as also reflected in the crash data and trends included in the previous sections of this paper. While not necessarily wrong, this approach provides a misguided understanding and view of the actual road safety situation. By focusing efforts on identifying a guilty party in a given crash opposed to investigating the *cause* of the crash, a lot of significant and relevant data about the crash might not be recorded. Such data can help create a more factual understanding of the underlying causes of traffic crashes and assist in identifying areas where improvement could result in reducing both crashes and fatalities.

Generally speaking, Mongolia has come a long way towards improving its road safety management efforts and creating leadership. The Ministry of Roads and Transport Development has been designated as "lead agency" to act as the main focal point in the coordination of road safety activities between various sectors, and to take charge on developing local capacity.

In addition to this, a National Committee for ensuring Traffic Safety in Mongolia has been established. The Committee was re-established by the Road and Transport Minister in 2017 with representatives from the Ministry of Road and Transport Development, Ministry of Finance, Ministry of Social Welfare and Labour, Ministry of Health, Ministry of Construction and Urban Development, Ministry of Education, Science, Culture and Sports, Ministry of Law and Home affairs, Ministry of Environment, Tourism, General Police Department, Professional Inspection Agency, Mongolian Red cross, Public medias, High education organizations and Non-Government organizations. A consultative meeting of the National Committee on Traffic Safety was convened on January 12, 2017 and chaired by the Road and Transport Minister.

At the meeting, the current status and level of the traffic safety situation in Mongolia was discussed, along with the current level of cooperation among key stakeholders and potential future efforts. A key point was particular attention should be given to addressing road safety for children, as they, despite generally decreasing crash numbers, continue to make up a larger portion of fatalities. Another key point raised was the aging vehicle fleet, as more than 70% of the vehicle fleet is more than 10 years old, as well as the fact that the left-side/right side steering wheel position is still almost at 50% distribution, despite targets of having reduced these numbers by 2015 significantly.

The main recommendations emerging from the meeting was that efforts and activities towards advancing traffic safety and reducing crash losses should be intensified in the period 2017 to 2020. The result was also an updated version of the supporting Action Plan (2012) for implementation of the National Strategy on Traffic Safety (a full summary of the meeting and the derived activities can be found in Annex D).

Such action plans and strategies need to deliver a clear result through the provision of a path for obtaining tangible and measurable results. Such results are not just the overall targets of reduction in fatality rates but more changes and improvements in the coordination, legislation, road safety engineering, and data systems. These areas consist of the basis for positive changes in the fatality rate. The current White Paper is part of a Technical Assistance Project financed by the Asian Development Bank (TA 9137-MON) carried out in 2017/2018, where the National Traffic Safety Strategy and supporting Action Plan were reviewed in close collaboration with MRTD. Towards the end of the implementation of this project, MRTD changed its policy on road safety and announced a new National Program on Traffic Safety (2018-2030) in June of 2018. The new program was also accompanied by a 2018-2030 Action Plan. The National Program on Traffic Safety is similar in many areas to the former National Traffic Safety Strategy, but differs in several key areas. While the latter used 2012 as a baseline for selected road safety indicators the newly introduced program sets 2018 as the baseline year. In addition to this, the main objective has also been adjusted substantially: in the National Strategy on Traffic Safety the main objective was to decrease the number of fatalities and seriously injured by 50% between 2012 and 2020; in the National Program for Traffic Safety this has been adjusted to 30% decrease between 2018 and 2030. Additionally, the strategic implementation indicators used in both documents have been revisited and adjusted significantly in the National Program on Traffic Safety. According to one of the new indicators, 70% of the activities in the former Action Plan (2012/2017) have been implemented by now.

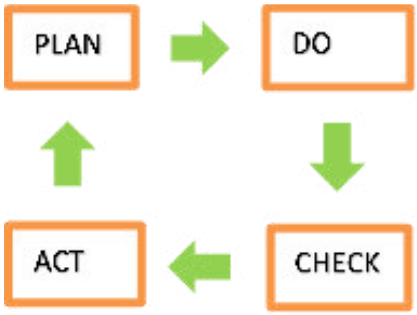
Comparing this to the CARES Regional Road Safety Strategy, which Mongolia has committed to, there are some differences, most notably in the newly adopted National Program for Traffic Safety of June 2018. While the CAREC agreed target is to reduce the number of fatalities on the CAREC road network by 50% in 2030, compared with 2010 baseline levels, the new target of Mongolia is now a 30% reduction by 2030 and using 2018 as baseline level. This is a quite significant difference in target measures, especially considering that the former target of the Mongolian strategy was at a 50% reduction, albeit by 2020, using 2011 as baseline. The principles behind the Mongolian strategy are somewhat more aligned with the CAREC strategy, as both are based on the guiding principles of the UN Decade of Action for Road Safety. CAREC also strongly encourages member counties to adapt action plans to ensure the implementation and achievement of the strategy. In this regard, Mongolia has for several years had an action plan for traffic safety in place, as mentioned above, and it was most recently adjusted as of September 2018 (check with Gotov/Katherine). Continued efforts should be made to further develop and strengthen both the strategy and action plan to ensure that road safety is addressed at the national level as well as supporting the regional efforts.

ISO 39001 Road Traffic Safety Management System (RTSMS)

To support the global efforts towards reducing crashes and crash fatalities, Sweden recommended in 2007 the “need to introduce a standardized road traffic management system in the field of road traffic safety”, aimed at addressing fatalities and injuries in traffic crashes, to the International Standardization Organization (ISO). Hence, a new proposal on international standards on the road traffic safety management was put on the table. In response to this initiative, an ISO committee was set to develop new standards and after seven international conferences, the ISO 39001 was issued on October 1, 2012. The ISO 39001 standard is intended to be a practical tool for government agencies, vehicle fleet operators, and organizations involved in transport or road safety. The standard is a tool that can be used for supporting strategies and actions to address risks in the road transport system, including the setting of ambitious road casualty reduction targets, the documentation of performance relative to those targets and the sharing of experience. Benefits identified in relation to the ISO39100 standard include:

- Improve overall road traffic safety performance;
- Establish, implement, and maintain a road traffic safety management system;
- Assure conformity with its stated road traffic safety policy;
- Demonstrate conformity with international standards through the ISO39001.

It is based on a quality management understanding which includes a Plan – Do – Check – Act cycle to support continual improvement by all public and/or private organizations involved in regulation, designing or operating road transport.



PLAN: it describes requirements as it relates to establishing strategic objectives and guiding principles for the RTSMS as a whole;

DO: it defines RTS requirements, determines how to address them and develops the procedures to manage and respond to an emergency.

CHECK: it summarizes requirements necessary to measure RTS performance, road traffic crash and other incident investigation, RTSMS compliance with the international standard and management's expectations, and seeks feedback from management regarding expectations.

ACT: it identifies and acts on RTSMS non-conformance through corrective action

In Mongolia, MRTD and the Mongolian Agency for Standardization and Metrology (MASM) translated and adopted the MNS ISO 39001 standard in 2014. However, to date no action has been taken on implementing the system or integrate it in current management practices. What has generally been observed is that the move from commitment and adaptation to implementation and activation poses a challenge in terms of knowledge, experience, time, and resources.

Data collection and use

The establishment data systems and supporting systems to collect crash data and measure progress of implemented actions is a crucial step in improving road safety management. It can provide decision-makers with an informed basis for actions and ensure targeted legislation.

Crash statistics are data about crashes with fatalities or injuries, including information about: exact location, date and time of a crash, involved vehicles and road users, type of collision, prevailing conditions (weather, lighting, road surface etc.), road infrastructure characteristics, fatalities and injuries. Or better – who is involved; what happened immediately prior to, during, and after the crash; where the crash occurred; when the crash happened; how the crash took place; and, through investigations and witness accounts, can establish why the crash occurred. This should to a large extent enable the crash investigators to establish contributing factors leading to the crash. Such data is primarily collected by the Police and are organized and analyzed in a national database. The data collected on the crash scene can be stored

and analyzed in a crash database system. The process can be paper-based or computerized and quite advanced.

Crash database systems have become very advanced in recent years, with features added that improves the analysis process and the derived results. Features of such systems include:

- GPS linkage to allow accurate identification of crash location and mapping;
- Pre-defined queries and reports with strong visual tools;
- Options for customized, user-defined queries and reports;
- Mapping ability for data entry, crash selection and presentation of aggregated crash information;
- Inclusion of crash narrative, sketches of crash scene, photographs and videos linked to crash;
- Cross-tabulation of data parameters to derive relations.
- Broad selection of pre-defined collision diagrams;
- Site ranking based on crash rates, numbers, costs, etc.;
- Ability to monitor sites of interest, i.e. before and after treatments.
- Ability to export data to third-party applications (e.g. Microsoft Excel, Statistical Analysis Software (SAS)) for further statistical analysis;
- Ability to add new data fields, according to changing needs or regulations.

The output of such database systems is often more reliable, accurate, and relevant crash information data, which can be delivered to relevant stakeholders in a reporting format suitable for the specific function of that stakeholder. Thereby road safety authorities can obtain a must more accurate and up-to-date picture of the road safety environment to plan and base their actions on. Crash data and statistics are also used in various road safety assessment systems, such as in the different stages of a Road Safety Audit (RSA), or for a Road Safety Inspection. The more reliable and accurate crash data available, the better the basis for effective remedial and preventive actions.

It may prove useful to test the data collected by the Police against other similar data, for example data collected by hospital trauma centers. This data will typically be different from the data the police have recorded and may capture data on traffic crashes that were not reported or recorded. For example, there may have been a bicycle crash where no police were there to record it. But if the cyclist had a broken arm he/she would typically be recorded at the hospital register despite not being in the police records. By comparing available data from other sources, patterns may emerge where the recordings differ significantly and consequently underreporting or mistakes in the reporting system may be identified.

While efforts have previously been made in Mongolia towards the development and introduction of a crash database system, such a system is not in place at the moment. Crashes are recorded by pen and paper by the Traffic Police (Accident form attached in Annex B) and later entered into a database. However, a new crash information system has been developed and is currently under implementation, which will also introduce tablets for crash collection. The Traffic Police has received 85 tablets for data collection, and the system is expected to be put into pilot-use in the fall of 2018. The development process has also aimed at optimizing the data collection parameters, so that the collection is not only focused on the police-aspect (guilty part identification and/or crime) of the crash but to a larger degree includes data on the road safety environment. This included introducing the understanding that in order to prevent fatalities and reduce crashes reliable data about *why* the crash occurred is needed, including contributing causes such as weather conditions, road condition, action prior to the crash etc. By moving the purpose of collecting data away from the main focus being to identify a guilty part to instead being on it being to use the data to prevent future accidents, a more solid data foundation is created for action. Such a change in mindset might also better encourage the public to report crashes when they occur, hence contributing to reducing underreporting.

This process and introduction of a crash database will assist road safety authorities in Mongolia in both evaluating current efforts, identify problem areas, and target future improvement actions better. It is expected to be of particular good use in relation to evaluating the progress of the Road Safety Action Plan and National Strategy on Traffic Safety in relation to the various strategic implementation indicators used.

The Cost of Road Safety

While it can be challenging to calculate and asses, the cost of traffic crashes and their related consequences can create a burden on society, both financially as well as on the social level. The costs for an individual family, the direct cost, where one of their members is involved in a traffic crash is a cost at one level, however the cumulated costs that then affects society has different cost (reduction of the labor force, increased dependency on medical services etc.).

Road safety involves cross-ministerial agencies and the cost derived from crashes is spread over several areas. Internationally recognized calculation of the financial burden of traffic crashes is based on 3 costs in particular:

1. Direct Costs
2. Loss of Production and,
3. Welfare loss.

Direct costs are normally associated with traffic crashes and includes

1. Police and rescue service
2. Material damage including cleaning up after crashes
3. Medical costs
4. Legal costs
5. Rehabilitation costs.

Loss of production is based on time of death against average life expectancy/general retirement age, and for disability – same calculation however either subtracted reduced production, or additional costs derived from continued care. The costs may vary between men and women.

Welfare loss covers the intangible costs of crashes such as grief and pain. Thus, the welfare loss is largely a political defined cost. It reflects the politician's willingness to invest in reducing the number of crashes. The relevance for adding this cost to the tangible cost is to establish a baseline for the societal cost which has larger ramifications for society's budgetary commitment and priority than any individual crash has for the people involved.

These three different types of costs are different from country to country, as they partly are dependent on the GDP per capita, along with salary level and value of imported goods relevant to particular costs. The welfare cost is mainly defined from other cost elements. The societal cost varies from country to country. Calculating the real road crash cost and any country societal cost is difficult as data access varies and its degree of relevance varies. In more wealthy countries the welfare loss might for example be valued higher and count more, compared to less wealthy countries. Therefore it can be very complicated to compare and contrast the costs associated with crashes and road safety across countries. However, overall costs associated with traffic crashes are estimated at 1% to 3% of a country's GDP.

With a realistic calculation of the cost and where the better the areas of cost are defined – the better you can estimate cost of interventions and the ratio of a given percentage of return. Thus, ratio of a cost against benefit can be established and used for measuring road safety efforts.

There are different models for calculating road safety costs. The above references one method, but road safety authorities of Mongolia are recommended to identify what is best suitable for the given context of Mongolia and include such cost considerations where relevant. The CAREC Road Safety Strategy provides an overview of data related to the estimated costs of road crashes in the region. The data in this overview shows that in the 11 CAREC countries road crash costs are at an average of 3.5% of GDP. The data also shows that in fact Mongolia

is the country with the highest cost at 5.8% of GDP compared to the second highest (Tajikistan) at 4.33% of GDP.

This will help create overview of not only costs but also budget spending and the allocation and planning of needed resources for continued road safety improvement measures.

Section Recommendations - What can Mongolia do?

- *Ensure robust and informative data collection through consistent use of the AIS.*
- *Encourage a Safe System Approach and work towards changing the system, so that the focus of a crash investigation is not only to identify a guilty party but also to investigate the underlying causes of the crash itself.*
- *Further review the Action Plan with the following in mind:*
  - *Reevaluate the inclusion of the various actions that are not directly related to road safety. The wider the focus is spread the harder it is to create measured impact and effect.*
  - *Further concretize the actions mentioned – the more detailed the action, the easier it will be to implement, follow up on, and measure.*
  - *Divide actions by cost and effectiveness and then prioritize implementation according to lowest cost activities with highest impact, in areas where budgets or funds are limited.*
- *Use more long-term strategic planning, as road safety is a process of interlinked activities over time.*
- *Provide the National Committee for Ensuring Traffic Safety in Mongolia with a stronger and independent mandate to carry out initiatives and activities.*
- *Allocate appropriate funding or install funding mechanisms for the committee.*
- *Members of the committee should be engaged in road safety work in their daily job function, so that they have a relevant background and base level of knowledge about road safety work to bring to the functions of the committee.*
- *Identify road safety staff and carry out a gap analysis in terms of road safety knowledge -provide training courses to fill the knowledge gaps as well as improve overall capacity.*

Pillar 2 – Road Infrastructure

The second pillar puts emphasis on the infrastructure element of road safety and hence on constructing safer roads and road networks. This is to be achieved through putting safety at the center of the planning, design, construction, and operations of roads, thus fostering improved road safety at each phase. This can be done via various engineering solutions, which are traditionally divided in two areas:

1. Remedial Engineering Measures – includes Black Spot identification;
2. Preventive Engineering Measures – includes Road Safety Audits, Road Safety Inspections.

Black Spots

As mentioned in previous sections, a black spot is a cluster of crashes centralized in a particular location, where crashes occur at a higher frequency than elsewhere. The benefits of identifying black spots and using the collected data is that road authorities are provided with a very specific objective for improvement through remedial measures, and can help improve overall road safety by remedying the location and help reduce the crash frequency there. Relevant road agencies and city planners, along with technical departments dealing with roads are generally the main actors in black spot improvement. The process of black spot improvement consists of various steps, which generally consists of the following:

- Identification - locating the various spots in the road network where there is a higher than normal frequency of crashes;
- Diagnosis - identify what the problems are at a given location, the contributing crash factors and the deficiencies in the road environment:
- Countermeasures - a systematic analysis to design the most suitable countermeasure for each cluster of crashes identified, based on the problems and deficiencies from the diagnosis;
- Estimating effects - assess the expected effects and effectiveness as well as estimated costs of the various countermeasures;
- Prioritizing - finding the best course of action, based on estimated effects, costs, along with any budgetary restrictions, and create an plan;
- Implementation - the realization of the prioritized and selected countermeasures for each location included in the plan;
- Evaluation - assessing the actual results of the implemented countermeasures in terms of cost and effect.

The table below demonstrates the various benefits of a selected number of crash reduction measures:

Figure 13: Overview of black spot treatment and crash effects

Targeted Black Spot	**Percent Crash Reduction**
Pedestrian treatment (traffic signals)	42 to 49% pedestrian crashes and 38% all crashes

Pedestrian treatment (non signal: refuges, kerb etc.)	68% pedestrian crashes and 27% all crashes
Roadside treatment	50 to 68% roadside crashes
Off-path/head-on treatments	40% all crashes

Source: Consia Consultants

Little attention is given to crash clusters and black spots in Mongolia, beyond identifying sections with most crashes in the various geographical areas of the country and cities. However, due to the focus within the traffic law on driver error and failure, it is not surprising that black spots are not given more attention. Black spots indicate deficiencies in the road environment, i.e. the infrastructure, which can contribute to an over frequency of crashes in that given location. Since very few crashes are classified as caused by the road environment (38 crashes in 2016 in Mongolia), it is understandable that has not been an area of priority for road authorities to address.

Getting access to crash data can be difficult in some countries. The police may consider data as confidential as they may in some instances have data on people and other sensitive information that does not concern, for example, the Road Agency. Data sharing is a fundamental condition for performing any meaningful black spot analysis. With the introduction of a modern web-based crash database, the information to be used by different stakeholders can be filtered by the database and special reports be generated to the Road Authorities and black spots can be identified. These data reports need to be cross referenced against the data collected by the Trauma Centers and a “situational assessment” needs to be performed in order to identify any potential gaps or underreporting. This is a detailed review of data sources and current collection practices. (TRL Report 2011). In areas where there is very limited internet coverage the Police is recommended to continue use paper forms with necessary changes to match the adjusted tablets. The accidents can then be uploaded manually to the database,

Generally the black spot analysis can be subdivided into 3 subcategories.

1. A place/location for example an intersection
2. Route corridor – for example a toll road; a specific road section on a highway
3. Area analysis – for example in suburban areas or city area

With the introduction of the modern crash database black spot analysis can be undertaken at any given time, as the database will provide easy access to live data as well as tools for analysis and data export.

A black spot is identified on the basis of an over frequency of crashes. However, the seriousness of the crash and whether or not it involved fatalities should also be considered. For example, 'fender-benders' in a city rarely have serious person injuries or fatalities, whereas on the motorway crashes have high fatality and severe personal injury rates. Severity is thus a factor that matters. Severity ranking often matters most as it is used to weigh fewer but more severe crashes up against more crashes with less severe outcomes. Moreover crash data on day or night time may provide details about type of crash as well.

Thus crash type and severity etc. need to be considered in black spot analysis. Also subdivision of a specific road user group like pedestrians or cyclists can be identified and filtered in the data analysis. The modern crash database can be a valuable tool in creating the cross tabulation that is required.

Identifying specific patterns can be done by road safety specialists and if such is not available because of a lack of education and/or training, such capacity deficiencies should be identified and training programs initiated. Given the potential impact of applying remedial measures it could be beneficial to reevaluate the efforts in treating crash cluster locations and black spot in Mongolia. It is recommended that special capacity building initiatives – training, regional exposure tours should be established for a few road safety specialists that later will be working with black spot treatment. As the main actor in road safety, it would be appropriate for MRTD to develop a program for improving road safety capacity amount its specialists.

According to the small surveys carried out in early 2018 by a local research team at the request of MRTD (both surveys attached in Annex G), it is recommended to establish a center for monitoring and analysis under the Traffic Police and Professional Inspection Organization to focus on implementation and improving the organization or road maintenance and repairs in Mongolia.

Road Safety Audits and Assessments

Road Safety Audits can be described as a method for systematically preventing road crashes through a proactive approach. They assess the safety aspects of road projects with the purpose of making new, reconstructed, or rehabilitated roads as safe as possible. The goal of road safety audit is to ensure that all new road projects as well as the maintenance and upgrading of existing roads are assessed from the standpoint of road safety, so that any

unsuitable approaches from a road safety standpoint are detected and corrected in time. The specific goals of a road safety audit are:

- ✓ To minimize the risk of crashes on a road project and to minimize their severity;
- ✓ Minimize the risk of crashes on adjacent roads, for example by avoiding crashes elsewhere on the road network;
- ✓ Responding to the needs and perceptions of all types of users and ensuring a good balance between the needs of different users where they may be in conflict (e.g. motorized / non-motorized, vulnerable road users etc.);
- ✓ To reduce the cost of the project in the long term, bearing in mind that unsafe road design may be more expensive or even impossible to correct in the future; and
- ✓ To improve knowledge and application of good road design practices by all those involved in road planning, design, construction, monitoring and maintenance.

It is always beneficial to carry out a road safety audit at several stages of a road project, except in the case of very small projects or very particular projects. When building a new road, for example, assessing the impact of location and type of intersections on road safety is an obvious step, even before intersections are designed and audited in detail.

The application of a systemic approach means that road safety considerations can be incorporated into a road project as soon as possible in the project. For this reason, international audit procedures describe five stages during the planning / design of the road project during which it is most beneficial to carry out a road safety audit. Generally the Road Safety Auditor is required to be completely independent of the road design and planning process hence allowing him to provide an impartial and independent audit. Road Safety Audit Manuals vary from country to country, but generally the following process and considerations are observed:

Figure 14: The Road Safety Audit Process

- ***Stage 1 - Initial design (planning)*;** an examination of the planning basis (such as choice of route options, standard, number of junctions and their type).
- ***Stage 2 - Draft (or preliminary) design*;** an examination, e.g. of alignment, cross-section and layout of junctions, before the political adoption of the project and before expropriations.
- ***Stage 3 - Detailed design***; an examination conducted before tendering material is finalized (such as the detailed design of junctions, markings and equipment).
- ***Stage 4 – Pre-Opening*;** an examination of the completed project just before and/or just after the road is opened.
- ***Stage 5 – Monitoring/Post-opening (existing roads)****;* regularly occurring assessment of the function, crash data, speed measurements, etc. of the road.

Experience has shown that a Road Safety Audit can reduce the number of future crashes by 30 to 40% on the road audited, depending on the context and circumstances. The implementation of the road safety measures recommended during an audit is a cost that has an impact on the immediate budget of the road project. But in most cases the benefits of reducing long-term crashes far outweigh the amount invested to implement these safety measures.

In Mongolia Road Safety Assessments are not used consistently nor at all stages of road construction, rehabilitation or on a regular inspection basis. Including requirements for audits in future road construction procurement procedures should be looked into, as well as establishing a stronger legal foundation for including road safety audits and inspections consistently. Any tender regarding road construction should – just like the use of EIA – also

have RSA (Road Safety Audits) included and 5 phases. Most – if not all – road construction is funded by either multilateral Banks and perhaps in some instances bilateral funds. It I assumed that none of those funding mechanism would contest the need for RSA in all design and construction phases of new – or major rehabilitation – construction. It is important to emphasize that international experienced road safety auditors are being involved. Either to undertake the RSA or as a quality control mechanism. Improvement of the necessary preventive engineering skills need to be given priority. Training combined with practical learning from a road construction site provides often better understanding and practical skills in terms of the issues at hand and solution scenarios.

The introduction of an improved crash information system will also provide road authorities with a better data foundation for targeting specific areas, and for providing relevant and updated data for road safety assessments.

The Mongolian authorities are generally aware of the need for preventive road safety engineering measures following international best practices. They do however need tools and knowledge about the specific items in order to make necessary improvements. Pride is often a hindrance for improvement. Instead of facing reality and make the necessary adjustment there tends to be some reluctance to follow international best practices.

Currently there is no certification schemes in place in Mongolia for ensuring skills and availability of qualified and experienced Road Safety Auditors to carry out the audits, and it is a topic which is being further investigated. Interest in the establishment of a certification system for Road Safety Auditors is present and the options available are being investigated. Involving international recognized and certified Road Safety Auditors to assist in preparing curricula, undertake the training in the beginning and being part of audits together with local trainees is an effective way forward and is the recommended approach for MRTD.

Further to this, the survey “Effects of Roads and Road Environments on Road Traffic Safety” (attached in full in Annex G) recommends to further improve studies on traffic crashes and establish a system of road safety audit, as well as conducting studies on traffic crashes twice a year on the basis of an approved methodology.

Section Recommendations – What can Mongolia do?

- *Reevaluate the current criminalization surrounding traffic crashes. While this can have relevance from an enforcement perspective, focus should also be on gathering information about the crashes, which can lead to the implementation of relevant preventive measures.*

- *Agree to a national definition of "blackspot" to ensure consistency in reporting among all stakeholders.*
- *Determine and agree on responsibility for identifying blackspots and leading subsequent actions. Based on current situation, it is recommended to be anchored at MRTD.*
- *MRTD should actively track and follow up on black spots, remedial measures recommended, and implementation status of remedial measures, using an agreed upon assessment framework.*
- *Incorporate road safety in all road-related projects and planning cycles.*
- *In particular in relation to Road Safety Audit:*
    - *Develop, update, or adapt road safety audit manuals that are relevant for the context of Mongolia's transport network and conditions;*
    - *Identify required qualifications and experience of road safety auditors and adapt these as a formal requirement for conducting audits. Consider creating qualifying training courses and a certification system over time;*
    - *Formally mandate the use of road safety audits through all 5 stages of road building and rehabilitation;*
    - *Formally require the findings of an audit to be included in the next phase of work;*
- *MRTD should establish training courses for road safety staff and road engineers in black spot identification, analysis, and remedial measures toolbox, to continuously build and strengthen capacity.*

Pillar 3 – Vehicle Safety

The third pillar addresses the issue of safer vehicles and how to create improved vehicle technology for both passive and active safety aspects. This is to be achieved through combining the harmonization of relevant global standards, consumer information schemes, and incentives to adapt new technologies, i.e. crash avoidance.

Vehicle Inspection

With an old and aging transport fleet, vehicle inspections can plan an important role in ensuring the road-worthiness of the vehicles operating in the road network of Mongolia. Older cars often present safety challenges if not properly maintained. While the vehicle may continue to be maintainable in terms of tires, brakes, etc., a subject area that is less obvious but just as important are the various electronic systems providing various degrees of safety.

An example of such system is Anti-Lock Brakes (ABS), by which the mechanical braking system will continue to work, but without the safety of the ABS system. Older vehicles are more likely to suffer electrical/electronic failures which are not immediately obvious, but which to a large degree will reduce the vehicle safety margins. The use of technically incomplete and unsafe vehicles for freight or passenger transport can result in personal injuries or fatalities but also loss of freight, damage to goods, delays etc.

In Mongolia there are currently 26 vehicle inspection stations, and in Ulaanbaatar 3 Government-run stations and 2 private stations. Many of the stations were established in the late 1990s and the equipment is becoming obsolete. At the same time, there is an increasing pressure on the inspection centers due to the growth in the vehicle fleet, and they operate well above their capacity. In 2016, around 500.000 vehicles were inspected at these centers. New cars are inspected only after 2 years of road use, while other cars are inspected yearly. With a very small portion (around 2%) of the vehicle fleet making up newer cars, the remaining 98% of the vehicle fleet creates a big pressure and demand on the existing inspection centers.

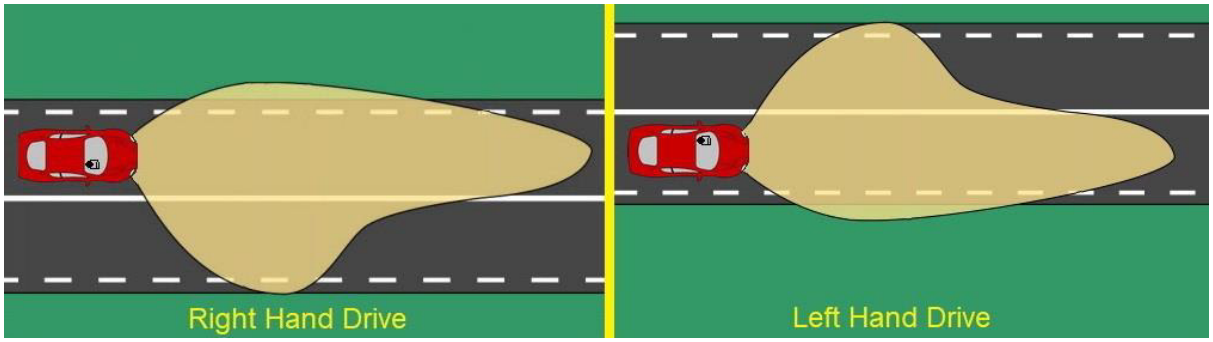
In this aspect, vehicle inspections and testing play an important role by ensuring that the vehicles travelling on the road network are adequate to do so. With an elderly vehicle fleet regular checks becomes especially important. Vehicles can become quite old but still work in usable condition if the important elements are repaired and maintained with regular intervals.

Below pictures from the Vehicle Inspection Center in Songinokhairkhan District, Ulaanbaatar:

Source: MRTD

A recommendation is that vehicle inspection for older cars should focus more on safety areas. A more rigorous process with stronger focus on brakes and steering system, for examples. In Mongolia there appears to be a well-functioning inspection system set up, which regularly inspect vehicles older than 2 years on an annually basis. International standards are used in these inspections. The main challenge with regards to inspections is the growing demand and pressure on the existing stations, resulting in long operation hours and waiting lines. The stations were designed with a significantly smaller vehicle fleet in mind and the increase in vehicle ownership is now showing.

About half of the vehicle fleet in Mongolia has the steering wheel in the right side. As the road network is designed for left-side steering, this combination of both systems on the road is a potential danger. Not only is the limited field of view when overtaking another car a problem, but asymmetrical passing light beams can be a source of obstruction for road users travelling in the opposite direction. Passing beams of headlights designed to meet the requirements of traffic moving left side of the road can increase crashes occurring at night time by blinding oncoming traffic – this is due to the fact that beams of right-side steering vehicles are designed to illuminate mainly the right lane, and vice versa for left-side steering, as seen below:



Source: Consia Consultants

Crash data for Mongolia confirms that more crashes occur at night time (18:00-00:00) than compared to day time. Data also suggest that more vehicles with right side steering are involved in crashes (as much as 70% of crashes in 2016 involved vehicles with right-side steering). Researchers at MRTD are working towards developing measures for adapting right-side steering headlight to left-side driving, and in that way prevent both discomfort to road users and reduce crashes caused by right side steering wheel position.

However, the general notion of a vehicle fleet with mixed steering-wheel position in a left-hand side road network is a serious cause of concern from a road safety perspective. Strong incentives should be considered for promoting the appropriate steering wheel position, such as a strict tax regime dissuading drivers from purchasing cars with the steering wheel on the right-hand side. Over time, such a scheme would reduce the number of vehicles with right-hand steering.

Protective Equipment

Using a seatbelt when in a moving vehicle protects both driver and passengers from injury or fatality if a crash occurs. When seat belts are used the driver and passenger in the front seat reduce their chance of injury by as much as 50%, while passengers in the back seat reduces injury chances by up to 75%. In Mongolia, more than 60% of all drivers and passengers involved in a traffic crash in 2016 were not wearing seatbelts, while in 16 % of the cases it cannot be determined if seatbelts were used or not.

Looking at car safety seats for children, the proper use of such seat can reduce chances of injuries to newborns with up to 70%, while toddlers strapped in safety seats have up to an 80% smaller chance of injury, if involved in a crash. The usage of car safety seats for children is insufficient in Mongolia. Information and awareness campaigns are the best way to improve knowledge levels and invoke a change in behavior. Several awareness campaigns have been conducted especially around schools to encourage the use of child protective seats but further, and continuous, efforts are needed.

Finally, use of a proper protective helmet when riding a motorcycle can reduce chances of head injury by 70% when involved in a crash. Data for Mongolia shows that rates for using protective equipment are very low, and in crashes recorded in the provinces in only about 8% of the crashes was protective equipment used. To combat this, the Mongolian Government has introduced new national standards, based on ISO standards and adapted to the

Mongolian context by the Mongolian Agency for Standardization and Metrology. Those standards are:

- Road vehicles — Anchorages in vehicles and attachments to anchorages for child restraint systems- Part 1: Seat belt anchorages and attachments. MNS ISO 13216-1: 2016;
- Road vehicles — Anchorages in vehicles and attachments to anchorages for child restraint systems. Part 2: Top tether anchorages and attachments. MNS ISO 13216-2: 2016;
- Road vehicles — Anchorages in vehicles and attachments to anchorages for child restraint systems. Part 3: Classification of child restraint dimensions and space in vehicles. MNS ISO 13216-3: 2016;
- Road vehicles — Protective helmets and their visors for drivers and passengers of motor cycles and mopeds– General requirements MNS 6629: 2016

Section Recommendations – What can Mongolia do?

- *Ensure that whenever a traffic crash occurs the position of the steering wheel is recorded along with the other crash data.*
- *Introduce strong incentives (i.e. taxation schemes) for promoting the use and importation of vehicles with left-side steering and hence reduce the number of vehicles with right-side steering operating the Mongolian road network.*
- *Increase focus on the safety aspects of a vehicle in the vehicle inspection system.*
- *MRTD should investigate the options regarding the construction of more vehicle inspection centers, as the existing ones are operating above capacity and demand is expected to continue to rise with the growing vehicle fleet.*
- *Make a plan for the operationalization and implementation of the newly introduced protective equipment ISO-based standards to help increase the use of protective equipment in vehicles.*

Pillar 4 – Road User Behavior

Pillar 4 in the Decade of Action places the road user in the center, focusing on safer road user behavior through increased law enforcement in combination with public awareness and education on helmet and seatbelt use, drunk driving, speeding and other road behavior risk factors.

Enforcement

Enforcement, together with engineering and education, is recognized as being one of the main ways of improving road safety. Enforcement should consist of a mix of both real and perceived enforcement in order to foster the strongest effect. It has been defined as an action aimed at controlling road user behavior by preventative, persuasive and punitive measures in order to effect the safe and efficient movement of traffic. Traditional methods of police enforcement include on-the-spot roadside checks and the use of automated devices such as speed cameras. To be most effective, police enforcement should be publicized, and involve a mix of highly visible and low-profile activities. Enforcement actions frequently target high-risk violations like speeding, drinking and driving, and not using a seat belt. Fines for failing to stop at a red traffic light, use of mobile phones and other lesser offences are also common.

Three elements are usually identified as being part of traffic law enforcement: legal regulations and norms that define how the road transport system should be used safely and effectively; police, which makes sure in an organized way that existing regulations are respected by all system users; and a set of legal sanctions for those who have failed to comply, whatever the reason. The success of enforcement is dependent on its ability to create a **meaningful deterrent threat** to road users. To achieve this, increasing surveillance levels are introduced to ensure that perceived apprehension risk is high, as is rising penalty severity and that procedures are in place to enable a quick and effective way to punish road traffic regulations violators.

Traffic laws have to be known and accepted by road users. However, knowledge about traffic rules is not sufficient for compliance. Penalties as a mechanism for getting people to obey the rules has a much greater effect when that penalty is compatible with the norms, values and the sense of justice held by the citizens themselves. Thus they are more likely to obey the rules they consider being **important**.

A particular topic that is relevant in relation to speeding and enforcement is the speed limits and speed limit zoning in the city. De facto there is currently a 60 km/h speed limit everywhere in the city of Ulaanbaatar due to weakly defined boundaries of e.g. residential

zones (where the speed limit is in fact 20 km/h but with no signage to indicate this). As a consequence, there are no speed limit signs in Ulaanbaatar besides when entering the city from a rural road. This produces a significant obstacle for speed enforcement and for users to apply the appropriate speed in a given area. It is therefore strongly recommended that the Traffic Police and MRTD in collaboration revise the speed zoning of the city as well as the speed signage to encourage safe driving speed.

Safe Drivers

Educating and re-educating the existing road users by means of public campaigns is an important element. Also, drivers can be re-educated by means of educating school children such that they can then influence their parents. This is a long-term mission but which can have profound results. New drivers are influenced by Driving Instructions, and by the taught syllabus. Driving Instructors must be sufficiently training to a syllabus that is more detailed in breadth and depth than the syllabus for Learner drivers. For example, driver education for new and existing drivers should preferably include at least the following:

- The risk and consequences of travelling at high speeds;
- Education regarding vehicle safety and its limitations;
- The dynamics of a vehicle at speed;
- Avoidance of overtaking and the minimal time saved by overtaking;
- The use of vehicle safety equipment; and
- Driver drowsiness during long journeys.

In order to improve driver skills among drivers a number of steps can be taken to ensure that newly qualified drivers are better prepared to drive safely and responsibly unsupervised after passing the driving tests. These may include:

- The introduction of independent driving into the practical test, together with withdrawal of test routes from the public domain;
- Further encouragement of the instructor accompanying the candidate on the practical test so that they are better placed to offer tailored advice or remedial action;
- The introduction of case studies in the theory test based on e.g. data from the crash database on common crash scenarios;
- Using the crash database to extract data on crash commonalities and tailor course components based on these.

Regarding driver preparation, recording, controlling and responsibilities, Mongolia has established a Recording and Controlling Center by an order of the General Police Department,

number 77 of 2014. The Center aims at improving permit systems issued by the Police department by law and centralization of services. Its professional control unit is responsible for following activities and plays an important role in ensuring road safety. Examples of activities include:

Figure 15: Development of software for professional examination of Drivers

Source: MRTD

Figure 15: Development of Electronic Examination System

Source: MRTD

For motorcycles, there are no legal requirement for a license and they are not covers under a regular driving license neither. Motorcyclists should be trained but it is unclear to what extent this is required and enforced, and how it is checked and verified. More than 91,000 motorcycles were imported in the last 5 years, and 32,000 motorcycles were registered in 2016 alone. It is further believed that not all motorcycles are in fact registered, which only increases the need to implement and develop a policy in this area. A system for training motorcycle Instructors should be initiated coupled with mandatory training for motorcycle riders, resulting in a motorcycle permit.

In addition, it would seem that there is no confirmed standards in relation to drivers' eyesight and general health in Mongolia. Both play an important role in the safety of the road users and in many countries, a mandatory doctor check is required prior to obtaining one's driver's license. Therefore it is recommended that the driver health and eyesight regulations in Mongolia should be reviewed and revised if necessary. Consideration should be given to mandatory use of a specified device for checking the eyesight of all new drivers, and for re-checking existing drivers at regular intervals (e.g. every 10 years).

Campaigns and Awareness

Road safety campaigns have been defined as "purposeful attempts to inform, persuade and motivate a population (or sub-group of a population) to change its attitudes and/or behaviors to improve road safety, using organized communications involving specific media channels within a given time period. A review of research into successful road safety campaigns offer some important lessons:

- ***Understanding the Motivation for the Unsafe Behavior***
  Evaluations suggest that the effectiveness varies depending on the type of behavior targeted. In other words, what works for drink driving might not work for changing behavior on speeding and vice versa. In some cases, e.g. for drunk driving and campaigning against driving when tired, campaigns which offer alternatives e.g. ensuring a designated driver or taking other transport options have proven effective. However, for other forms of unsafe road behavior, such as speeding, the unsafe behavior may be linked to a belief that speeding is a socially acceptable behavior, particularly among youth. In this case, campaigns would need to focus on challenging these social beliefs, as opposed to offering alternatives.

- ***Targeted Campaigns Work***
  In contrast to the general belief that the wider the prospective audience of a publicity campaign the more effective, research consistently shows that campaigns are more

effective when they are more targeted to specific groups. In other words, locally more personally directed campaigns are often more effective, including for reaching people with lower levels of education. In the United Kingdom, they have run campaigns under the THINK banner seen as the voice of the road user's conscience. The campaign has however developed material at local levels targeted to the issues that most affect residents there.

- ***Messaging***

  Many road safety campaigns have appealed to fear based on a belief that when fear is aroused people will become more motivated to accept the message and change behavior. However, this can lead people to employ defensive responses e.g. claiming that the campaign is not entirely true or even avoiding exposure. The effectiveness of fear campaigns appear to depend on two aspects: a) the extent to which people believe they can do something to change the situation or prevent the situation from occurring, and b) the extent to which people feel that they themselves are in any danger of the consequences portrayed. In other words, only if people feel that the consequences are relevant to themselves and consider themselves able to take the preventive measures themselves is there a likely chance that the fear campaign will work.

- ***Cultural Environment***

  Another important factor in campaigns is understanding the cultural context. In the Netherlands for example humor is often used in road safety campaigning. Campaigns need to reflect on the cultural aspects as non-traditional campaigning methods imported from other contexts may cause controversy and detract from messaging.

- ***Gender***

  Gender also impacts on the effectiveness of different messages. Women for example appear to respond more favorably to fear appeals than men. Therefore, a campaign using fear as the motivation factors may be less effective if the primary target is male.

- ***Addressing "Automatic Behavior"***

  Many road safety campaigns appear based on overall principle that if people knew better they would act differently i.e. that we are all rational decision-makers. However, research shows that many of our actions are based on habits, feelings, biases, circumstances and so on. Behavior may thus be "automatic": behavior that is done unintentionally and without conscious knowledge and control. One way to address this it through timing. In other words, campaigns can aim to coincide with when the target may be re-evaluating their habits (e.g. when they move job or address or start a family). In addition, since information

alone may not change this automatic behavior, other techniques might be useful, for example priming. Priming is the activation of certain mental constructs by presenting people with sensory input (words and images). When people are presented with certain images and words, this can lead to their automatically reflecting this behavior that the stimuli invokes.

- ***Financing campaigns***

  An emerging economy is always facing shortage of funds for financing their development initiatives. They are often dependent on donor funds and the priorities are difficult to place. It is therefore good to point out that investments in feasible crash preventive measures are, if not ethically motivated, certainly economical viable. However well the economic arguments are they rarely resonate among the public. Calculation of the crash costs enhances the understanding of road safety work as an investment for the society rather than an expenditure. But a major constraint for anchoring this understanding among the public, politicians and decision makers is the fact that saved crash costs do not return to the budget of the institutions that are responsible for road safety investments. Political awareness is therefore an important issue. As the road safety problem cannot be fully addressed with initiatives financed with Government funds the private sector can also be a source of interest for funding various road safety initiatives. For example campaigns are an area where the private sector both can finance the cost and also getting positive exposure. In order to avoid another stakeholder promoting road safety via campaigns that it becomes part of the overall coordinated effort so that the area advances by having the stakeholders operate in concert. Also to ensure quality in the campaign and possibly supported by other initiatives.

The challenge for those developing road safety campaigns would thus be to find the types of images, words etc. that could stimulate the desired road safety behavior. Modelling could also be another effective strategy in this regard, presenting people with an example of how we would like them to act rather than vice versa. This can be particularly effective when aiming to address negative social norms i.e. emphasizing that the desired behavior is something everybody does and is perceived by most people as the accepted behavior. Below is an example of a Danish campaign that is quite self-explanatory. The text translated is “Drive car, when you are driving”

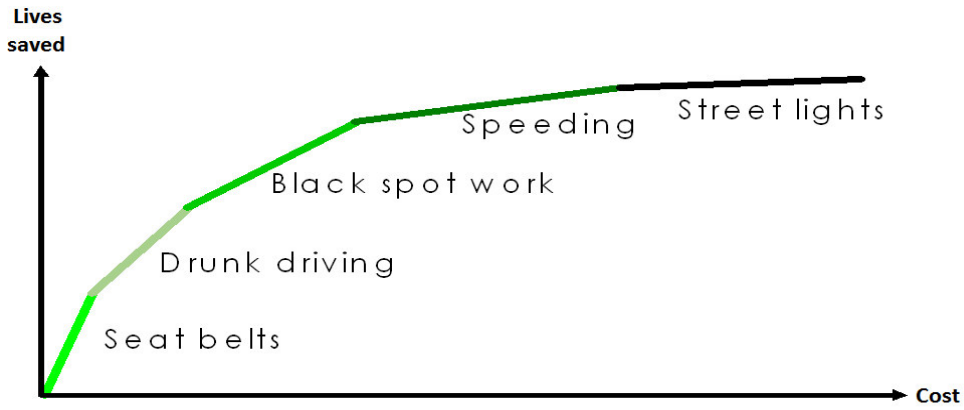
In Mongolia there has been several campaigns. Some of them are highly professional both in term of the research behind as well as presentation and certainly reaches international levels. The NGO *Global Shapers* has implemented a number of campaigns that were prepared and implemented in a sound and professional manner. The annual UN Road Safety Week is celebrated in Mongolia, in 2016 for the 4th time under the slogan "Slow Down - Safe Lives". All the main road safety stakeholders in Mongolia were involved in the work, including Ministry of Health, MRTD, National Police, WHO, UN Children's Fund, Metropolitan Education Department, ADB etc.

The focus was on speed and how speed impacts safety. Activities for the campaign included:

- Training of school staff in crash prevention in school zones;
- Online training of 21 provincial police departments to improve speed enforcement on local roads;
- Public promotion through posters, TV spots, social media, and happenings throughout Ulaanbaatar;
- Training in "Speed and Traffic Safety" of 300 students at the Law Enforcement University;
- Banners on public buses promoting the slogan of the week;
- "Managing Speed" video produced by popular Mongolian Rapper Gee Munkh-Erdene distributed and shared via social media;
- Public Transport Drivers training in speed as a crash risk, and how to participate and contribute to a safe road environment.

These initiatives demonstrate that the capacity and will for campaigning is very present in Mongolia. The annual *Road Safety Week* can be a great eye-opener for many road users and an effective tool in raising awareness.

The main challenge in relation to campaigns is that resources are scarce for financing such campaigns. Also, there is a lack of coordinated effort. The campaigns need to be supported by enforcement from the Traffic Police, the schools when appropriate etc. Data collection at the Police and at the Ministry of Health is not that well-coordinated and the results is that the campaigns may not be as effective as it could have been if there were a stronger coordination. The below diagram roughly demonstrates the correlation between the costs of different actions against the lives that it can potentially save. As an example, seatbelt as a topic is quite low cost compared to the amount of lives it can save, whereas speeding is very costly to address and has less impact on lives saved comparatively. The diagram can serve as inspiration for when planning and executing campaigns.



Source: Knud-Flensted Jensen, Road Safety Awareness and Campaign Expert

Section Recommendations – What can Mongolia do?

- *The Traffic Police should continue to work with improving and strengthening enforcement efforts further and incorporate a mix of highly visible and low-profile enforcement activities.*
- *The Traffic Police and MRTD should collaborate to revise the speed zoning of the city as well as the speed signage to encourage safe driving speed.*
- *Design campaigns with long-term goals and activities, based on the structure of the campaigns introduced under the ADB-financed project TA 9137-MON (2017/2018).*
- *Continue to further strengthen collaboration among road safety stakeholders when planning and implementing campaigns.*
- *Conduct a full review of the driving Instructor's training syllabus to ascertain that sufficient road safety elements are included in the training to give the instructors the right tools to train new drivers to become safer in traffic.*
- *Review and assess whether the current training and requirements for motorcycle drivers are sufficiently stringent.*

Pillar 5 – Post Crash Care

The fifth and final pillar in the Decade of Action initiative addresses post-crash response and care, aiming at improving emergency treatment and long-term rehabilitation for crash-victims. The main objective of the post-crash response is to improve the likelihood of survival from a road crash and limit the chances of severe disability later. This requires access to call for help, an efficient ambulance service with paramedics on board, and a well prepared trauma center.

The concept of the 'Golden Hour' is one of the key concepts. This concept centered on the benefits of quick treatment following a crash, which has demonstrated that the likelihood of survival and/or reduction of severe disability increase. Therefore, ambulance response time and quality of the emergency service provided on the site of crash play an important role for post-crash care.

Emphasis is on quick response time but it is also imperative that the medical facility that the patient is transported to is properly equipped with the right instruments and medicine, as well as the staff being well trained in handling crash victims. Campaigns about first aid and offering training in this, for example for school children, can also play an important role. Basic medical training of first-responders, such as police staff or firefighters, can also help secure better survival options as these actors are often the first on the site of a crash when time is the most critical. These are especially valuable investments in places where there is great distance or where transportation between people/cities/trauma centers is complicated. To best achieve a fast-responding, high quality post-crash care system, a structured approach to this challenge is encouraged. The higher quality there is at each of these key areas, the stronger chances are of reducing the number of fatalities and severely disabled caused by car crashes.

In Mongolia, the Ministry of Health (MOH) is administering the hospitals. There are 57 hospitals of which 6 are private. A little more than half of them are in Ulaanbaatar while the rest are provincial hospitals. 2016-statistics from the hospitals show that the 5 main areas of treatment at the trauma centers are:

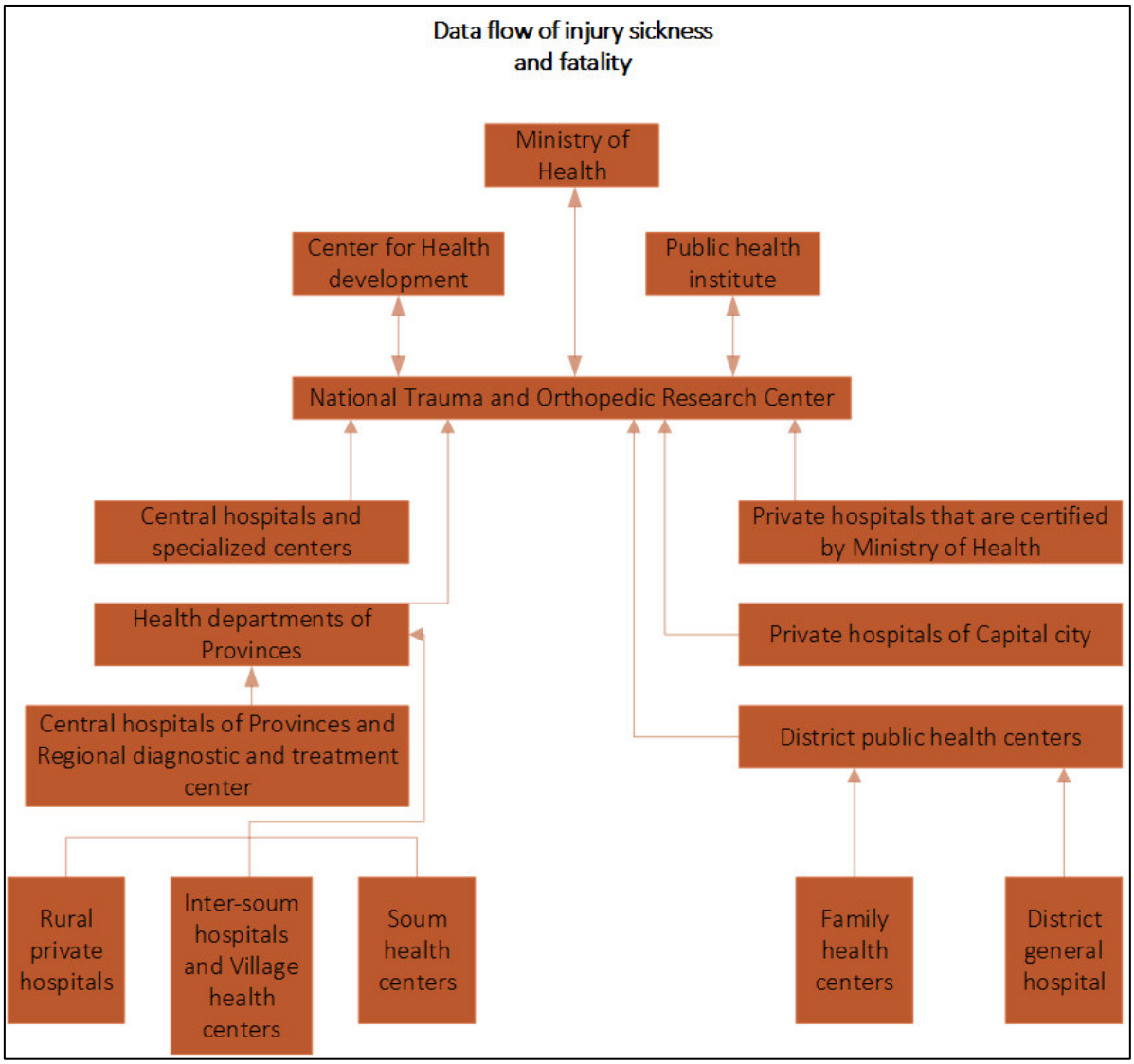
1. Falling – 36%
2. Traffic crashes – 16%
3. Violence – 16%
4. Equipment or tool related /14.5%/
5. 5. Injuries caused by animals /7.7%/

In 2011, the MOH issued an order with reference 434, introducing "Accident registration forms, manuals, procedures, and data flow". This requires all health organizations to gather data

using standardized forms provided by the MOH. As of 2016, the rate of submission of the accident forms is now reaching 74%, with the Ulaanbaatar hospitals submission rate at 57% and the provincial hospitals at 90%. Lack of human recourses, poor internet connections and lack of proper training are the main causes of underreporting and low submission rates. The form is used to account for accident causes and consequences, but also provides a basis for evaluation of efforts as well as identification of problem areas.

By using a standardized form the reliability of the data is generally improved. The following chart from MOH accounts for the flow of data from the various organizations and entities under the Ministry:

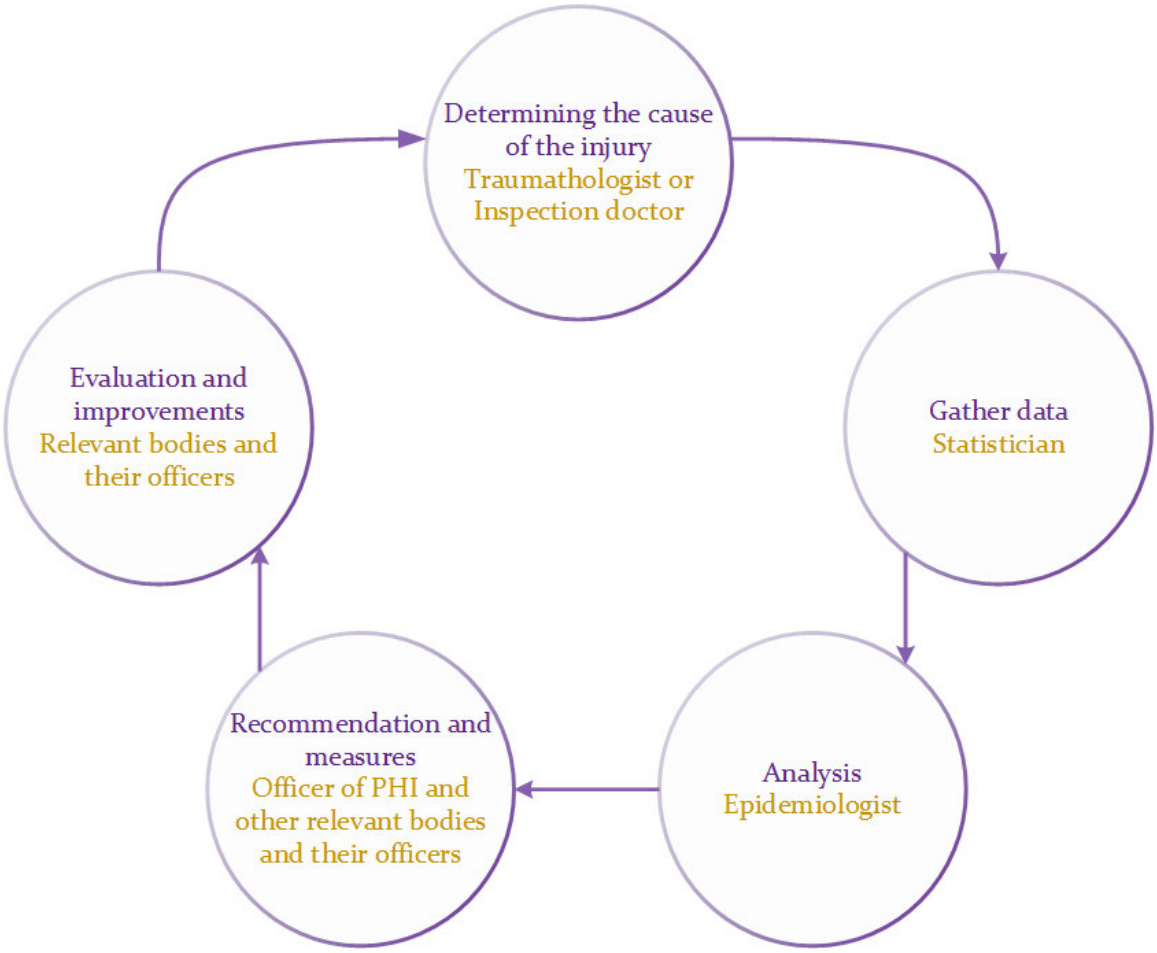
Figure 16: Data flow - Ministry of Health



The procedures are that the Traumathologist (the on-duty responsible doctor at a trauma center) will determine the cause of injury and fill out the relevant form; in the case of a car crash, he will fill out the Accident Registration Form. A Statistician will then enter the data into

the Health-Info 3.0 database application. Finally, an Epidemiologist or other medical specialists/doctors will analyze the data and submit relevant findings to the appropriate authorities or administrative bodies for further action. The procedure is shown below in a chart provided by the MOH:

Figure 17: Flowchart of the data and diagnosis process



A Surveillance and Research Unit has been established by MOH to assist with the data collection efforts. The objective of the unit is to ensure the formulation of injury related policy and to plan and implement preventive measures in collaboration with relevant bodies and organizations, based on the suggested policies.

The crash form of the MOH differs from that of the Traffic Police; the data collected is different and the focus is also different. The Traffic Police uses the crash data mainly to establish whether a crime was committed against road safety, while the MOH uses the collected data to improve efforts and identify shortcomings. An improved dialog between these two road

safety stakeholders regarding traffic crashes is recommended, as each can benefit from the data collected by the other.

The Public Health Institute recorded a total of 17,198 traffic crash-related injuries in 2016, and 485 fatalities. In 92.6% of the crashes recorded in the provinces no protective equipment (e.g. seatbelt, helmets, child safety seats) was used. With such significant data the MOH could cooperate more with the Traffic Police in terms of focused enforcement. The MOH is also trying to reach out to the public by use of campaigns regarding road safety and in that way try to reduce traffic crashes. Slogans such as “Slow down – Save your life” are used.

The Ministry of Health and MTRD has been working well together for years and MRTD is interested in not only continuing the cooperation, but also expanding it.

Section Recommendations – What can Mongolia do?

- *Continue to strengthen the collaboration between MRTD and MOH in relation to post-crash response activities.*
- *Review training procedures of medical staff, in particular paramedics and first-responders such as Traffic Police and firefighters.*
- *MOH should introduce a series of training courses and capacity building for various types of first responders, with particular focus on the rural regions.*
- *Introduce first aid courses in the Driving Training syllabus for new drivers, so that all new drivers will have to complete a mandatory first-aid course in order to obtain their driver’s license.*
- *MOH and the Traffic Police should work on improving data sharing as both entities collect relevant accident data that can provide information to improve road safety activities.*

SUMMARY OF SECTION RECOMMENDATIONS

- Ensure robust and informative data collection through consistent use of the AIS.
- Encourage a Safe System Approach and work towards changing the system, so that the focus of a crash investigation is not to identify a guilty party but also to investigate the underlying causes of the crash itself.
- Further review the Action Plan with the following in mind:
    - Reevaluate the inclusion of the various actions that are not directly related to road safety. The wider the focus is spread the harder it is to create real impact and effect.
    - Further concretize the actions mentioned – the more detailed the action, the easier it will be to implement, follow up on, and measure.
    - Divide actions by cost and effectiveness and then prioritize implementation according to lowest cost activities with highest impact, in areas where budgets or funds are limited.
- Use more long-term strategic planning, as road safety is a process of interlinked activities over time.
- Provide the National Committee for Ensuring Traffic Safety in Mongolia with a stronger and independent mandate to carry out initiatives and activities.
- Allocate appropriate funding or install funding mechanisms for the committee.
- Members of the committee should be engaged in road safety work in their daily job function, so that they have a relevant background and base level of knowledge about road safety work to bring to the functions of the committee.
- Identify road safety staff and carry out a gap analysis in terms of road safety knowledge -provide training courses to fill the knowledge gaps as well as improve overall capacity.
- Reevaluate the current criminalization surrounding traffic crashes. While this can have relevance from an enforcement perspective, focus should be on gathering information about the crashes, which can lead to the implementation of relevant preventive measures.
- Agree to a national definition of “blackspot” to ensure consistency in reporting among all stakeholders.
- Determine and agree on responsibility for identifying blackspots and leading subsequent actions. Based on current situation, it is recommended to be MRTD.
- MRTD should actively track and follow up on black spots, remedial measures recommended, and implementation status of remedial measures, using an agreed upon assessment framework.
- Incorporate road safety in all road-related projects and planning cycles.

- In particular in relation to Road Safety Audit:
  - Develop, update, or adapt road safety audit manuals that are relevant for the context of Mongolia's transport network and conditions;
  - Identify required qualifications and experience of road safety auditors and adapt these as a formal requirement for conducting audits. Consider creating qualifying training courses and a certification system over time;
  - Formally mandate the use of road safety audits through all 5 stages of road building and rehabilitation;
  - Formally require the findings of an audit to be included in the next phase of work;
- MRTD should establish training courses for road safety staff and road engineers in black spot identification, analysis, and remedial measures toolbox, to continuously build and strengthen capacity.
- Ensure that whenever a traffic crash occurs the position of the steering wheel is recorded along with the other crash data.
- Introduce strong incentives (i.e. taxation schemes) for promoting the use and importation of vehicles with left-side steering and hence reduce the number of vehicles with right-side steering operating the Mongolian road network.
- Increase focus on the safety aspects of a vehicle in the vehicle inspection system.
- MRTD should investigate the options regarding the construction of more vehicle inspection centers, as the existing ones are operating above capacity and demand is expected to continue to rise with the growing vehicle fleet.
- Make a plan for the operationalization and implementation of the newly introduced protective equipment ISO-based standards to help increase the use of protective equipment in vehicles.
- The Traffic Police should continue to work with improving and strengthening enforcement efforts further and incorporate a mix of highly visible and low-profile enforcement activities.
- *The Traffic Police and MRTD should collaborate to revise the speed zoning of the city as well as the speed signage to encourage safe driving speed.*
- Design campaigns with long-term goals and activities, based on the structure of the campaigns introduced under the ADB-financed project TA 9137-MON (2017/2018).
- Continue to further strengthen collaboration among road safety stakeholders when planning and implementing campaigns.
- Conduct a full review of the driving Instructor's training syllabus to ascertain that sufficient road safety elements are included in the training to give the instructors the right tools to train new drivers to become safer in traffic.
- Review and assess whether the current training and requirements for motorcycle drivers are sufficiently stringent.

- Continue to strengthen the collaboration between MRTD and MOH in relation to post-crash response activities.
- Review training procedures of medical staff, in particular paramedics and first-responders such as Traffic Police and firefighters.
- MOH should introduce a series of training courses and capacity building for various types of first responders, with particular focus on the rural regions.
- Introduce first aid courses in the Driving Training syllabus for new drivers, so that all new drivers will have to complete a mandatory first-aid course in order to obtain their driver's license.
- MOH and the Traffic Police should work on improving data sharing as both entities collect relevant accident data that can provide information to improve road safety activities.

Annex A – Number Registered Motor Vehicles

No	Years	Numbers of motor vehicles (vehicles except motorbikes and trailers)					
		Passenger	Truck	Bus	Tank truck	Special	total
1	1929						20
2	1930						50
3	1931						121
4	1932						202
5	1933						310
6	1934						413
7	1935						365
8	1936						322
9	1937						359
10	1938						498
11	1939						618
12	1940						928
13	1941						1358
14	1942						1357
15	1943						1357
16	1944						1099
17	1945						1139
18	1946						1398
19	1947						1341
20	1948						1497
21	1949						1633
22	1950						1792
23	1951	252	1663	6		21	1942
24	1952	340	1781	10		38	2169
25	1953	487	1805	20		40	2352
26	1954	741	2625	46		95	3507
27	1955	858	3092	55		151	4156
28	1956	1025	3729	86		206	5046
29	1957	1167	4498	107		264	6036
30	1958	984	4688	159		611	6442
31	1959	1436	6689	219		884	9228
32	1960	1429	7835	258		1313	10835
33	1961	1440	7608	279		2304	11631
34	1962	1989	9710	329	895	631	13554
35	1963	2218	10163	382	1147	685	14595
36	1964	2482	10221	365	1316	730	15114
37	1965	2666	9514	294	1232	1105	14811
38	1966	2913	10230	397	1093	1269	15902
39	1967	3082	10273	528	1176	1439	16498
40	1968	3334	11409	725	1152	1527	18147
41	1969	3457	11699	579	1294	1629	18658
42	1970	3544	12091	603	1292	1799	19329
43	1971	3766	19457	725	1410	1983	27341
44	1972	3917	12688	728	1498	2250	21081
45	1973	4082	12928	738	1642	2424	21814
46	1974	4677	14403	785	2257	1918	24040
47	1975	4959	15373	927	2491	2097	25847
48	1976	5424	16347	99	2696	2427	27893

49	1977	5519	17213	2953	1119	2471	29275
50	1978						No data
51	1979	5571	18144	1243	3126	2718	30802
52	1980	5947	18734	1422	3315	2849	32267
53	1981	5983	19149	1408	3357	2655	32852
54	1982	6301	19406	1562	3435	2961	33665
55	1983	5820	19910	1969	3428	3166	34293
56	1984	5641	21318	1460	3800	3335	35554
57	1985	5795	20265	2001	3735	3209	35027
58	1986	6063	21368	1532	4100	3209	36272
59	1987	6063	21368	1532	4100	3611	36674
60	1988	6217	22919	2105	4325	3781	39347
61	1989	7662	24400	2591	4754	4085	43492
62	1990						No data
63	1991	11860	22420	1928	3819	3594	43621
64	1992	16162	22144	1650	3261	3101	46318
65	1993	20220	20504	1881	2995	1975	47575
66	1994	20663	25378	2500	2736	2776	54053
67	1995	29482	24451	2195	2132	1952	60212
68	1996	30001	26877	3784	2146	2212	65020
69	1997	35594	26580	4070	1902	2052	70198
70	1998	37795	25473	4579	1678	1965	71490
71	1999	39921	25049	6012	1615	2243	74840
72	2000	44051	24671	8548	1683	2740	81693
73	2001	53198	24747	10187	1613	3326	93071
74	2002	63224	24610	10841	1709	3421	103805
75	2003	69531	23248	9937	1349	3230	107295
76	2004	79691	25430	10645	1376	3276	120418
77	2005	87792	27435	11067	1267	3623	131184
78	2006	95115	29443	11791	1084	4036	141469
79	2007	110150	33676	13038	1353	3772	161989
80	2008	119790	37564	14175	1182	4126	176837
81	2009	153917	47337	16920	482	6253	224909
82	2010	172583	61841	16366		3696	254486
83	2011	208514	75090	22547		6391	312542
84	2012	354383	106711	9285	1283	32761	504423
85	2013	433382	151530	5992	6113	18726	620661
86	2014	471574	161467	6200	1664	16516	674869
87	2015	509287	169006	6474	7761	15091	720278
88	2016	547299	175648	6823	7768	28481	766019
89	2017	586821	182181	6864	7541	31602	815009

Annex B – Traffic Accident Reporting Form (ENG)

Traffic Police department

State of the road crash by inspection

Date: …. ….. ….. ……..

(province, city, district)

TDP inspector: …… with

Detective: ……

Analyst: ……

Witness: ……..

Province/City: ……

Town/District: ……

Street: ……..

Date of case: ……

Call date/time:……

Type of crime/crash/violation: …….. ()

Constitution date/time of inspection: ……

Vehicle description

Make			
License number			
Organization			
Severity level			
Description of the crash	Speed	Drivers statement	
		Witness statement	
		Conclusion	
	Trail of the brake (meter)		
	Vehicle weight, number of passenger		
Describe loss of the vehicle			

Driver's statement

Name: first, last	
Education, Profession, Occupation	
Driver's License number Is valid?	
What is the name if driver school the driver has completed and when it was	
Address, nationality	
Status of the health /drunken, too tired, sick etc/, how many hour have worked	

Victim and injurer's description

No	Name /f.l/	Age, gender	Work and home address /contact number/	Status of the injury	Name of the hospital delivered at

Comments on the witness

No	Name /f.l/	Registration number of National ID	Work address /contact number/	Home address /contact number/

Diagram of the crash site measurement

Diagram by:

……..

Diagram observed by:

……..

Witness:

……

……

Road and environment status

/mark the correct statuses/

Asphalt Concrete Improved Gravel road Cobblestone Soil	Straight -uphill -downhill Slope, straight -uphill -downhill Curved, straight -slope -uphill -downhill Damaged Mountain, gulch River, snowy	Dry Wet Icy Snowy Slippery Wetness Mudded	- At Junction - Controlled - Non-controlled - Pedestrian cross - Bus station - Rail cross - Bridge, Tunnel - Square - In town - Outside town - Collector road - Non public road	Visible area: - Free - Limited - Not enough Road: - Street light - No street lights - Not enough	- Stable - Cloudy - Rain - Snow - Rain storm - Snow storm - Foggy - Windy	- With One direction - With Opposite direction - With safety - With Separation strip - With no Separation strip - Number of lanes: 1 2 3 4 5 6 7 8 - With pedestrian road - With no pedestrian road - With fence - With no Fence - With small fence - With no small fence

Special comments:

……

……

……

……

……

Executed by: …….. Read by: ……

Annex C – Accident Clusters (Black Spots) by province

No	Roads			Roads:

		Number of registered crashes	Percent in total number	Inter-section	direct to West	direct to East	direct to North	direct to South
Khan-Uul district								
1	“MES” Intersection	359	6.7	113	70	43	32	5
2	Intersection of 120k	350	6.5	72	36	84	26	38
3	Intersection of district	336	6.2	63	34	30	27	
4	Intersection of MULS	265	4.9	41	39	44	13	
5	Intersection west side of “Dunjingarav”	264	4.9	46	71	13	15	
6	Intersection of “college of light industry”	255	4.7	52	103	14	9	
7	“Roundabout” to direct Tuv aimag	239	4.4	33	52	33	32	
8	Intersection south side of “Peace” bridge	235	4.4	41	41	21	53	
Chingeltei district								
1	Intersection of Bayanburd	953	22	405	45	84	162	45
2	Intersection of first market	387	9	162	38	32	60	9
3	Intersection of temple “Geser”	342	7.9	140	19	54	38	15
4	Intersection of ‘Tsetseg’ center	300	6.9	149	16	42	25	1
5	Intersection south side of “Bombogor”	277	6.4	145	15	21	25	9
6	Intersection east side of State store	265	6.1	143	16	12	34	1
7	Intersection north side of ‘TEDI’ center	177	4.1	92	10	12	17	7
8	Intersection of food market “Shonkhor”	150	3.5	85	10	2	7	13
Bayanzurkh district								
1	Intersection of “zuun dorvon zam”	930	10	177	69	192	93	51
2	Intersection of hospital for contagious disease	708	7.6	153	114	63	85	28
3	Intersection of market “Tsaiz”	639	6.9	148	73	130	20	29
4	Intersection of “Dunjingarav”	548	5.9	151	121	27	11	33
5	Intersection of “SCSM”	530	5.7	168	27	99	15	23

6	Intersection of Officers	524	5.6	157	61	51	35	24
7	Intersection to direct “Dari-Ekh”	518	5.6	128	26	48	103	19
8	Intersection of “Chuluun ovoo”	457	4.9	121	29	109	15	12
9	Intersection west side of market “Naran Tuul”	422	4.5	118	63	3	29	21
10	Intersection of “Bohiin orgoo”	375	4	124	8	32	13	58
Bayangol								
1	Intersection of “Ahuin uilvhilgee”	782	9.7	226	140	121	30	56
2	Intersection of “10-r horoolol”	648	8.1	203	166	22	43	41
3	Intersection east side of “Urgoo”	603	7.5	167	86	107	38	44
4	Intersection of last station of “horoolol”	561	7.0	164	94	72	47	34
5	Intersection of 25th drug store	521	6.5	149	52	65	73	43
6	Intersection of “Sapporo”	492	6.1	102	38	126	46	49
7	Intersection north side of “Urgoo”	487	6.1	154	67	63	72	1
8	Intersection South side of market “bars”	454	5.6	155	73	20	28	57
Songinokhairkhan								
1	Intersection of driving school	785	12.1	183	122	38	152	146
2	Intersection on “Bayankhoshuu” hill	693	10.7	118	96	131	94	127
3	Intersection of “tavan shar”	670	10.3	207	118	113	102	7
4	Intersection of 5th garage	574	8.8	231	144	33	27	34
5	Road south of the 32th flat	377	5.8	142	71	28	51	16
6	Intersection of “sonsgolon”	310	4.8	75	54	53	10	61
7	Intersection of market “Harhorin”	288	4.4	115	40	25	53	2
8	Intersection west of “Sapporo”	258	4	110	47	27	27	0
Sukhbaatar district								
1	Intersection of “Zuun ail”	692	10.1	239	90	48	109	81

2	Intersection of MNUE	414	6.1	153	60	70	41	15
3	Roundabout of “32”	406	6	101	6	54	119	53
4	Intersection of center “Ulzii”	308	4.5	102	13	69	49	19
5	Intersection of 50th market	254	3.7	107	47	25	11	18
6	Intersection of Central Post	254	3.7	115	11	45	32	5
7	Intersection of MFA	247	3.6	89	18	38	35	22
8	Intersection of Traffic police	236	3.5	128	30	20	11	4

Annex D – Meeting Summary: National Committee for ensuring Traffic Safety in Mongolia

National Committee for ensuring Traffic safety in Mongolia, January 12, 2017

The National Committee for ensuring Road Safety in Mongolia was re-established by Road and Transport Minister's order #01 of 2017 where representatives from Ministries of Road and Transport Development, Ministry of Finance, Ministry of Social Welfare and Labour, Ministry of Health, Ministry of Construction and Urban Development, Ministry of Education, Science, Culture and Sports, Ministry of Law and Home affairs, Ministry of Environment, Tourism, General Police Department, Professional Inspection Agency, Mongolian Red cross, Public medias, High education organizations and Non-Government organizations. Consultative meeting of the National committee on the Road safety was convened on January 12, 2017 and chaired by Road and Transport Minister.

From the participating organizations in the consultative meeting the following presentations where introduced and discussed. Whereas "Traffic safety ensuring Strategy and its implementation status", "Current status of the Traffic safety in Mongolia and key challenges", "Comparison of the Traffic safety results of Mongolia with other countries results", "Measures taken in the local areas to provide the Traffic safety"

The current meeting has given an opportunity for the open discussion of the current level of cooperation among the key organizations in charge of the Traffic safety, future potential joint efforts and proposed constructive comments and ideas to solve the challenging problems with theoretical and practical justifications and grounds.

From meeting participants:

The crime cases and violations against the traffic safety is decreasing however if we will not conduct a systematic and theoretically well-grounded measures in the long run it might increase again, thus this must be a priority area for Mongolia and this situation is well accepted by all.

Also it was highlighted on the need of organizing a full extend of activities towards children because in National level the number of fatalities and injuries are decreasing however the portion of children fatalities are at rise, which is a big worry.

Over 70 percent of the entire transportation units used nationwide are 10 and more years been in use and half of which is having the steering wheels on the right side.

Main recommendations of the meeting of **"National Committee for ensuring Traffic safety in Mongolia" were** to advance and intensify the Traffic safety directed activities and we aiming to decrease the occurrences of the violations and crimes against Traffic safety and same time aiming to reduce the overall loss from traffic accidents for the period of 2017-2020.

Whereas:

One. To modernize the Traffic safety regulations and policy framework

1.1. To amend the following laws:

- Key governing laws for to maintain the Traffic safety: Road law, Road Transportation law, and Parking law needs to be amended and adopted;

- To make an amendment to Traffic rule, so that to establish the favorable conditions for the Traffic safety law's implementation as possibly smooth;
- To amend the Excise law and make limitations on importation of old cars as well as vehicles with right side steering wheels.

Second. To modernize the actions towards implementation of the Traffic safety policy

2.1. To make amendments and changes to following regulations and administrative decisions issued by Mongolian minister. Local administration and Governors:

- To re-formulate the pedestrian light standard within the 2 quarter of this year and organize actions to implement them;
- In connection to the National strategy on Traffic safety provision each of the sectors, administrative units should have a plan is formulated and implemented accordingly;

2.3. Based on the high schools and universities to launch a task force research teams including representatives from different sectors to study the accident causes and organize certain measures to accept, use the conclusions issued by this research team respectfully;

2.4. To formulate a more advanced methodology and technical approaches to detect the use of narcotics and mentally sedative medicines and drugs and make amendments to pertaining chapters of Traffic safety law to reflect the regulations;

2.5. To formulate constructive programs and plans on Traffic safety in cooperation with key stakeholders in charge of subject matter.

Three. On activities towards preventive, research and public awareness measures

3.1. To conduct investigative research among the teenagers and youth on their knowledge level on the traffic safety rules and its applications to analyze the violations and crime cases registered in National level in cooperation with professional, research and survey organizations;

3.3. To increase the use of high quality detective capacity CCTVs able to recognize the car registration numbers, to rationalize the location of cameras and increase the detection coverage area by improved quality of recordings as well as with full set of camera system that would allow the full enlargement of recorded cases;

Four. To Non-Government organizations and business entities

4.2. To maintain a high level of organized efforts to provide Traffic safety and to ensure of carrying out a preventive measures at all time

4.3. To organize more educational activities towards public to get them understand the Traffic safety related laws, regulations and standards,

Five. Call to general public

5.1. Strictly adhere and comply all of the laws and by-laws, regulations and rules adopted to ensure the Traffic safety, sections and parts concern to yourself;

5.2. To behave in cultured manner in the times of the heavy traffic congestion or similar difficulty with shown respect and patience on the situation and follow the "Zig-zag" rule of "You - Me";

5.3. The road side parking during the dark hours or in areas where the visibility is limited are main reasons for traffic accidents on the country side roads, thus please make sure of switching on the parking or side marking lights at all temporary stopping occasions by full filling your duties set in the Traffic rule;

5.4. To obtain information on the reasons of imposing certain bans from related organizations and officers and follow their guidance to ensure the safety;

5.6. To responsibly respond to lawful requirements filed by the citizens on the Safety concerns.

Annex E – National Strategy on Traffic Safety, Mongolia (2012)

(*Translated from Mongolian)*

MONGOLIAN GOVERNMENT RESOLUTION

2012.5.2 Ulaanbaatar

146

NATIONAL STARTEGY ON TRAFFIC SAFETY

Government of Mongolia decrees to implement national road safety concept 1.2.3 provision, UN # 64/255 resolution of 2010, to provide traffic safety:

1. To approve the national strategy on traffic safety (2012-2020) by annex 1, strategy implementation action plan by annex 2 respectively.

2. To order D. Hayanhyarva, Minister of Finance, Ts. Dashdorj, Minister of Road, transportation, construction and urban development, Ts. Nyamdorj, Minister of Justice, N. Hurelbaatar, Minister of Health, Yo. Otgonbayar, Minister of Education, culture and science, and aimag and city Governors to reflect the budget required for the strategy implementation in annual state and local budgets along with taking measures of financing from aids and assistance of foreign, internal citizens, companies, organizations.

3. To order related minister, government agency head, all level governors each to organize implementation of measures reflected in the strategy plan within responsible work areas, location.

4. To order Ts. Dashdorj, Minister of Road, transportation, construction, urban development to organize implementation of strategy, plan nationwide and present the implementation progress, outcome within the 1st quarter of every year to the Government.

PRIME MINISTER OF MONGOLIA S. BATBOLD

MINISTER OF ROAD, TRANSPORTATION,
CONSTRUCTION, URBAN DEVELOPMENT TS. DASHDORJ

Government resolution # 146, 2012

1 st annex

NATIONAL TRAFFIC SAFETY STRATEGY (2012-2020)

One. Rationale and needs

Worldwide annually more than 1.2 milion people lose their lives in traffic accidents, around 50 million people get injured and become invalids along with the fact that the main reason for death of children and young people between age of 5-29 is the traffic accident. There is a tendency for the traffic accident to become the third main reason of the death after heart attack and depression, more than 90 percent of people died in traffic accidents live in poor and developing countries and in total the loss worth of 65 billion USD occurs annually as emphasized by UN. In 2010 General Assembly announced 2011-2020 "Years of traffic safety" and released 64/255 order to decrease the traffic accidents dramatically and aimed to decrease the death by 50 percent.

At the meeting in 2010 Thailand, Bangkok of Asia Pacific social and economic committee the Expert group meeting recommended to decrease the traffic mortality rate of each country and recommended "Traffic safety recommendation".

As for our country the number of traffic accidents, violations have been increasing year by year and related mortality rate is on raise[2]. Out of total accidents, injuries happenning in the country the traffic accidents make 18.9 percent[3].

Official statistics, surveys conducted among the population reveal the high number of traffic related incidents and injuries. For example[4], among 15-64 year old population 4 percent have been involved in traffic accidents in the last 12 months. The main factors influencing the traffic incidents, injuries are speeding (22.7 percent) and drunk driving (9.1 percent) violations, however research also pin points other weaknesses such as the city planning not meeting the contemporary requirements, poor enforcement of laws, regulations, rules and standarts regulating traffic safety, road transport fleet is too outdated, the traffic participants culture and education is poor and insufficient coordination between agencies in charge of ensuring traffic safety. The wrong perception that traffic safety is the responsibility of the traffic regulator and driver was dominant until now, lately scientists defined the provision of modern traffic safety consist of comprehensive "Man- Transport- Road – Environment" approach.

Two. Long term vision or future goal

2.1. Decrease substantially the negative impact of traffic accidents by providing cooperation , connection between sectors and establishing comprehensive safety system "Person - Transport – Road – Environment ".

[2] *Information package on traffic accidents, injuries and its prevention, 2010, MMSS.*
[3] *Health statics indicators. 2008 , HO.*
[4] *Study on traffic accident reasons, risk factors – their spread. 2009, page 86-89.*

Three. Strategic objective

3.1. To reduce the number of fatalities and seriously injured from traffic crashes in Mongolia by 50% each between 2012 and 2020.

Four. Main strategic objectives

4.1. Traffic safety management.

4.2. Safe road and environment.

4.3. Safe transportation.

4.4. Activities for pedestrians.

4.5. Post-accident aid, service.

Five. Guidelines to be followed in the implementation of the strategic objective.

5.1. Traffic safety management:

5.1.1. strengthening the capacity of agencies and organizations in charge of traffic safety;

5.1.2. develop specialized professional human resource/manpower;

5.1.3. improve legal measurements;

5.1.4. establishing an organization to coordinate traffic safety management on the national level and defining clearly and properly the responsibility and duties of the related organizations;

5.1.5. creating financial source /funding for the implementation of the national strategy;

5.1.6. improve auto transport insurance system;

5.1.7. develop common research and database system;

5.1.8. establish independent research unit to study traffic safety in comprehensive way;

5.1.9. the traffic monitoring will be conducted by the following category:

а) traffic movement monitoring (traffic coordination, organization, signs, notifications, driver's monitoring of the transportation);

б) Monitoring of traffic participants (monitoring of movement of traffic participants, registration of violations, interrogation process).

5.2. Safe road and environment:

5.2.1. improve the road traffic network safety for all participants, especially children, elderly people, physically challenged people, pedestrians and bicyclists;

5.2.2. improve and develop city planning legislations and general plan, establish responsibility matrix;

5.2.3. plan the distance between city blocks to be not more than 150 meters;

5.2.4. the city center traffic load to be decreased by adopting " user pays" principle;

5.2.5. in the process of road planning, drawing, project development, building and utilization use modern technologies, standards and must meet safety requirements;

5.2.6. make traffic safety assessments not less than once a year;

5.2.7. closely link the road network planning with the pedestrian, travelers and transportation planning.

5.3. Safe transport:

5.3.1. improve road safety by meeting worldwide standards, requirements and modern technologies;

5.3.2. develop policy on import of road vehicles;

5.3.3. develop and implement technical requirements, standards for manufacturing, building transport and its parts domestically;

5.3.4. develop and implement policy on operation or maintenance of road vehicles;

5.3.5. establish common system " Service- Diagnosis- Monitoring" by developing maintenance information database for transports

5.4. Activities for traffic participants :

5.4.1. penetrate in all levels of educational system the knowledge of traffic safety to citizens;

5.4.2. in order to ensure traffic safety to organize broadly the advocacy work on laws and legislations to advance public awareness, culture, knowledge;

5.4.3. Improve responsibility and discipline of traffic participants by advancing traffic safety law, legislation, rule and standards;

5.4.4. Specially focus on and prevent violations such as speeding, drunk driving, not using safety belts , safety helmets;

5.4.5. improve driver preparation, specialization, testing and license obtaining process .

5.5. Post-accident aid, service:

5.5.1. improve the quality of the fist/ emergency assistance, rehabilitation service and other services ;

5.5.2. train citizens to have first aid assistance skills;

5.5.3. establish insurance system to be able to provide immediate assistance to the injured and injury and accident investigation system;

5.5.4. increase number of medical emergency response points in the road network and provide with manpower, technology and equipment;

5.5.5. by connecting drivers' medical check up record to drivers' registration system to insure the compulsory medical check up

Six. Organization of the strategy implementation

6.1. the central state organization in charge of road, transportation will organize the implementation of the strategy , provide professional methodological supervision, assess the implementation process, outcome according to indicators and coordinate the inter sectors' cooperation work.

6.2. Governors of all levels jointly with professional organizations will organize the implementation of the operation plan locally, and will monitor the implementation, report the outcomes.

6.3. Action plan to be implemented in conjunction with aimag, soum, city, settlement general plan and other projects, programme related to traffic safety.

Seven. Financing

7.1. The following sources will be funding sources to implement the strategy :

7.1.1. state and local budget ;

7.1.2. loan, aid, project financing;

7.1.3. donations and support from organizations, companies, citizens;

7.1.4. other sources.

Eight. Strategy Outcome, monitoring, assessment

8.1. The following outcomes will be achieved by implementing the strategy:

8.1.1. improvement in the capacity of organizations in charge of traffic safety nationwide, number of traffic accidents will be decreased, intersectoral cooperation will be improved to prevent and provide assistance during traffic accidents;

8.1.2. the preventative environment from traffic accidents and injuries will be established on the certain level;

8.1.3. quality and access to medical assistance will be increased, and human resource capacity will be improved;

8.1.4. significantly decrease the life, health and material damages occurring from traffic accidents ;

8.1.5. the central state body in charge of road, transportation will monitor, assess the implementation of the strategy and present the outcomes to the government annually;

8.1.6. local governors of all levels will monitor and asses the implementation of the strategy and report annually to the central state organization in charge of road, transportation.

NINE. STRATEGY IMPLEMENTATION INDICATORS

9.1. Strategy to be assessed and evaluated by the following indicators:

Indicators	2012 base level	2015 – level to be achieved	2020 – level to be achieved
Traffic accident related mortality (per 10.000 transportation means)	17.5	13.1	8.8
Number of people seriously injured due to the traffic accident (per 10.000 transportation means)	48.1	36.0	24.0
Percentage of traffic accidents due to the pedestrian fault	17.0	12.7	8.5
Length of the paved road meeting the traffic safety standards (km)	2244 km	5000 km	10000 km
Increase the financing for continuance maintenance and repair of the state quality paved roads, funding for annual 200 km road reconstruction to ensure the utilization (tug)	9.000 mln tug	40.000 mln tug or above	60.000 mln tug or above
Number of organizations to be responsible for road, road objects maintenance and repair, monitoring.	21 km	Every 200 km	Every 150 km
Newly planned and built safety exits, crossovers	2	6	12
Number of independent audits conducted on the safety of newly proposed road projects	350 km	2500 km	5000 km
Violations related to drunk driving (percentage) City Countryside	 7.5 27.1	 5.0 20.0	 3.0 13.0
Number of staff specialized in traffic safety working in the sector	18	50	400
Percentage of usage of safety equipment: -safety belt -protection helmets -child seat	 13.5 7.1 0.0	 90 90 90	 100 100 100

Number of people attended the first aid for victims of accidents and injured training	1957	40000	80000
Equipment provision for measuring alcohol level and speed (unit)	6	89	100
The pedestrian and bicycle road length (km)	2450	2700	3000
Number of technical checkups and diagnosis stations	23	28	35
Average age of transports (year)	11.2	10	9
Road vehicles with left hand steering wheels (percentage)	54.0	75.0	95.0
Average duration to receive aid after the accident (minute)	30	20	15
Implementation of accidents and injury investigation system (percentage)	62	85	95-98
Average traffic speed of Ulaanbaatar center (km/hour)	12	30	45

Annex F – Action Plan

(2012-version, revised at the January 2017 meeting of the National Committee for ensuring Traffic Safety in Mongolia)

№	Actions	Required funds (mln. tugrugs)	Financing sources	Responsible agencies	Term of implementation
	Pillar 1. Improvement of Road Traffic Safety Management				
	1. Approve and implement a Mid-term Action Plan of implementation of the National Strategy for ensuring Road traffic safety:				
1	1.1.Incorporate collected comments from stakeholders and approve annual plan by the Meeting of the National Committee, send it to relevant agencies and provide them with recommendations and guidance	-	-	MRTD	Plan in December of each year, approve in January of next year
2	1.2. Prepare and fulfill of the Action Plan for each half year and whole year and send it to the National Committee and provide stakeholders with relevant recommendations and guidance	-	-	MRTD, MOH, MJIA, MECSS, Governor's Office of the Capital city	In July of each year, first quarter of next year
3	1.3. Conduct Monitoring of the short-term and mid-term action plans' implementation	-	-	MRTD	4-th quarter of each year
4	1.4. Prepare and ensure approval draft proposal to be reflected in Guidelines for socio-economic development of Mongolia	-	-	Members of the National Committee	Each year
	2. Start with preparation and implementation of the Action Plan on the basis of international best practices:				

5	2.1.Use and implement best practices from 3-5 countries that have good experiences on road safety in ensuring traffic safety in Mongolia	150	ADB funded project	MRTD, MJIA, project implementation team	Twice per year
6	2.2. Localization in Mongolia international best practices on improving discipline of drivers and other road users	-	-	MRTD, MJIA, MOH, MECSS	Current year
7	2.3. Make policy on ensuring traffic safety in transportation in Mining	-	-	MRTD, MJIA, MMHI, MET	2017-2018
	3. Define in detail responsibilities of relevant agencies and establish a National consultative committee for implementation:				
8	3.1. Set up a National consultative committee in conjunction of approval of the Road Safety law	-	-	MRTD, MJIA	2017-2018
9	3.2. Ensure approval of the Road transport law, Road law, precisely define responsibilities of relevant agencies, and provide them with recommendations and guidance for implementation	-	-	MRTD, National consultative committee for ensuring Road traffic safety	2017-2020
10	3.3. In association with the UN Regional organizations, WTO west region of the Pacific and Central Asia regional organizations of cooperation, organize nationwide workshop on improving road safety and reducing road traffic crashes	10	Support from WTO and UN regional organizations	MRTD, MOH, National consultative committee for ensuring Road traffic safety	2017-2019
	4. Specifically train Traffic safety specialists and workers:				

11	4.1. organize the training of Traffic safety specialists and workers at University of Law Enforcement and Transport University;	-	-	MECSS, MJIA	2017-2020
12	4.2. reflect in the training programs for the Traffic safety related specialists in a way that the training will be closely tied with practical activities;	-	-	MECSS, MJIA, MRTD Governor's Office of the Capital city	2017-2020
13	4.3. Conduct survey on the students studying in Foreign or domestic high education facilities under road and construction professionals and support their study or provide job places for graduators.	-	-	MECSS, MRTD National consultative committee for ensuring Road traffic safety	Each year
14	4.4. prepare a training program for the Secondary school teachers and pupils on educating them on Traffic rules and to organize the activities of conducting such trainings	200.0	ADB	MECSS, MRTD, Global shapers NGO, Law Enforcement University	2017-2020
	5. Use 10 percent of the Road and transportation infrastructure investments for securing the traffic safety				
15	5.1. conduct a survey in relation of potential of using 10 percent of the Road and transportation infrastructure investments for securing the traffic safety	State budget	MRTD	MRTD, Ulaanbaatar Traffic Control Center	2017

16	5.2. create a legal basis on using 10 percent of the Road and transportation infrastructure investments for securing the traffic safety	-	MRTD MoJ	MRTD, Ulaanbaatar Traffic Control Center	2017-2018
17	5.3. make at least 1 inspection on the annual basis for maintenance and technical conditions of Road markings, signs, guardrails, directional tools, technical devices for traffic regulations	-	MRTD	Provinces' Governors	Each year
	6. Establish integrated monitoring system, software database, equipment to be used in implementation of traffic safety related legislations nationwide:				
18	6.1. Establish integrated monitoring system, software database, equipment to be used in implementation of traffic safety related legislations	1'200.0	National budget and projects	MOF, MRTD, MJIA	2017-2020
19	6.2. Specifically introduce a clause to the transportation law about vehicle and driver registration, formulate the solution to the finance problem and include to budget law of Mongolia in 2018-2020.	-	-	MRTD, , MJIA	Every year
20	6.3. Organize the development, implementation, and formulation of the utilizing rule to raise "Traffic safety supporting fund" indicated in the Traffic safety law.	200,0	State budget and projects, National Road Transport Center	MOF, MRTD, Governor's Office of the Capital city, MJIA, General Police Department, National Road	Every year

				Transport Center	
21	6.4. Use “Traffic safety supporting fund” indicated in the “Traffic safety law” for prevention actions from traffic crash and accidents.	450,0	State budget, projects, National Road Transport Center	MOF, MRTD, Governor’s Office of the Capital city, MJIA, General Police Department, National Road Transport Center	Every year
	7. conform the Traffic safety laws and rules to the international benchmarks, revise the rules and standards and approve them:				
22	7.1. revise the Traffic rule and bring up for Cabinet discussion for endorsement and implement it	-	-	MJIA, MRTD, General Police Department, NTCC	2017-2020
23	7.2. conduct a survey in relation of modernization of Traffic safety standards, laws and rules, revision of standards and rules	10.0	National center for Road and Transportation. Norm, normative’s fund	MRTD, GPD, NTCC, UTCC	2017

24	7.3. revise at least 10 rules and standards on Traffic safety laws and rules such as Traffic rule and other standards to the international benchmark, bring them for an approval and implement them accordingly	150.0	National center for Road and Transportation. Norm, normative's fund	MRTD, MJIA, UTCC, NTCC	2017-2020
	8. Demark the sectorial roles and responsibilities on Traffic safety control and create a legal environment for control actions:				
25	8.1. conduct a scientific analysis on the current Traffic safety status with help of Professional organization	5.0	State budget, projects and measures	MRTD, , GPD, UTCC Governor's Office of the Capital city, NTCC	2017-2018
26	8.2. create an integrated database for Traffic accident survey, drivers and transportation vehicles, to create a legal frame of using such integrated database	1'500.0	State budget, projects and measures	MOF, MRTD, Governor's Office of the Capital city, GPD, NTCC	2017-2020
27	8.3. a) create a legal basis of conducting the Traffic control (Traffic regulation, organization, marking, control on driver registration and vehicle inspection) with monitoring of Government and Non-government organizations and implement them accordingly	-	-	MRTD, MOH, MJIA, GASI	2017-2018

28	8.4. б) create a legal basis for the control on the Traffic participants (Traffic control on the traffic participants, registration of cases, investigative activities), keeping the log on the driver's variance and establish a system that each of the Traffic rule violation cases are accounted for legal responsibility	-	-	MJIA, MRTD, GPD, NTCC	2017-2018
29	8.5. During the formulation of the "State policy on the Road and Transportation" the Traffic safety issue needs to be included and legal basis to provide the inter-agency collaboration needs to be clearly defined	-	-	MRTD, MJIA	2017-2020
30	8.6. develop research and studies on Road and Transport sector and to establish a Research, experiment and Study organization	200.0	State Budget	MOF, MRTD	2017-2020
	9. Control 70 percent of total road traffic by using a modern equipment:				
31	9.1. Approve and implement the national strategy on ITS	1500.0	ADB	MRTD, Governor's Office of the Capital city, NRTC	2017-2020
32	9.2. Establish the terminal stations of public transportation, equipping bus stops with camera to control bus stop;	1500.0	State budget, Projects	MOF, MRTD, MCUD Governor's Office of the Capital city	2017-2020
33	9.3. Control 60 percent of total road traffic by using a modern equipment.	3000,0	State budget, Projects	MOF, MRTD, M JIA, MCUD, Governor's Office of the	2017-2020

				Capital city and Provinces	
34	9.4. Arranging a research work on condition to control the road traffic by using modern equipment and making an advice and submit it to related organizations.	-	-	MRTD, MJIA, MET, Governor's Office of the Capital city	2017
35	9.5. Implement a RFID system in technical inspection, tax, insurance and vehicle service.	2000,0	State budget	MOF, MRTD, MJIA,	2017-2018
36	9.6. Implement an online service into vehicle registration system	1200,0	State budget	MOF, MRTD	2017-2018
	10. Provide traffic policemen with alcohol and speed testers:				
37	10.1. Provide traffic policemen with 250 alcohol tester and 50 speed tester	4500,0	State budget	MOF, MJIA	2017-2020
38	10.2. Establish the laboratory in the national institute of trial analysis and providing drug tester	2500,0	State budget	MOF, MJIA	2017-2020
	11. Train or retrain specialists to determine objective and subjective causes of crime				
39	11.1. Retrain professors of Law enforcement university in developed countries	150,0	Projects	MRTD, MJIA	2017-2020
40	11.2. Provide a library of the Law Enforcement University with books, text books and journals.	120,0	Projects	MRTD, MJIA MCUD, MECSS, MET	2017-2020
41	11.3. Arrange the scientific conferences between divisions on determining objective and subjective causes of crime	2,5	-	MRTD, MJIA MCUD, MECSS,	2017-2020

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	12. Establish an individual organization to analyze causes of crime against road traffic				
42	12.1. Approve the Traffic accidents and crime investigation law	-	-	MRTD, MJIA	2017-2020
43	12.2. Prepare the specialists for establishing individual organization to analyze causes of crime against road traffic			MRTD, MJIA MECSS	2017-2020

Pillar 2: Safe roads and Improvement of environment

	13. Increase length of paved road network and optimal place road signs, markings, lightening, fence and cross ways alongside of the International and State paved road networks:				
44	13.1. Connect all province centers with capital city by paved road, and materialize connections of all province centers among them and nearest border points by paved road (connect Gobi-Altai, Khovd, Bayan-Ulgii, Uvs and Dornod provinces with Capital city by paved road and enable to reach over 7500 km of total length of paved road network alongside of State roads).	1500.0	State budget, Foreign loan and aids, TXXT	MRTD, MOF	2017-2020
45	13.2. Put into full operation AH4 route of the Asian Highway or road between Yarant, Khovd –Khovd- Ulgii- Ulaanbaishint	197.4	Foreign loan	MRTD, MOF	2017-2020
46	13.3. Step by step reconstruction of AH3 route of Asian highway network or road Altanbulag-Ulaanbaatar-Zamyn Uud (Already started reconstruction of road section Ulaanbaatar-Darkhan)		State budget, Foreign loan and aids, TXXT	MRTD, MOF	2017-2020

14. Ensure normal operational conditions of the Road network and create conditions for safe travel					
47	14.1. Increase number of Road maintenance units by 5 that undertake maintenance and current repair of International and State roads in accordance of norms, and are responsible for paved roads conditions	110.0	State budget	MRTD, MOF	2017-2020
48	14.2. Undertake capital repair and reconstruction of 504 km of State roads	226.8	State budget, Foreign loan and aids, TXXT	MRTD, MOF	2017-2020
49	14.3. Undertake capital repair and reconstruction of 1128.8 long meters of reinforced concrete bridges on the rivers: Chigestei, Ongi, Turgen, Tslgar, Ulsan hooloi, Tsagaan sum, Tes, Herlen, Buyant, Huurai hundii and Kharaa	145.0	State budget	MRTD, MOF	2017-2020
50	14.5. Annually conduct surveys on points where frequently happen road traffic crashes on the state road networks, place necessary road signs and markings and provide public with warnings and information	-	.	MRTD, Road and transport research center	2017-2020
15. Adaptation of international best practices and advanced technologies in expanding and reconstruction of the Road networks					
51	15.1. Conduct surveys and implement international technologies that are suitable to Mongolia's road and climatic conditions		State budget, Foreign loan and aids	MRTD, Road and transport research center	2017-2020
52	15.2. Introduce new technologies that suit to international standards in testing, inspecting and surveys on road construction		State budget, Foreign loan and aids	MRTD, Road and transport	2017-2020

				research center	
	19. Improve urban planning master plan and related legislations::				
53	19.1. Prepare revised draft law on urban planning and its concept papers and adopt the law.	-	-	MCUD	2017
54	19.2. Define the alignments of the roads that are planned in Ulaanbaatar 2020 Master plan and Development approaches for 2030 and draw it on software.	2.0	City budget	MCUD, Governor's Office of the Capital city	2017
55	19.3. Documents of "State policy on urban development"	-	-	MCUD, Governor's Office of the Capital city	2017
	20. During city planning the distance between apartment blocks to be not more than 150-200 meters:				
56	20.1. Public services (kindergarten, school, service center etc.) should be included in the newly planned residential complex and distance between apartment blocks to be not more than 150 meters.	3'000.0	City budget and projects	MCUD, MUB, TDCC	2017-2020
57	20.2. Prepare draft law on Urban redevelopment and its concept papers and adopt the law.	-	-	MCUD	2017
58	20.3. Prepare Main and minor road intersection standards and approve the standards.	2.0	City budget	MCUD, Governor's Office of the Capital city	2017

59	20.4. Approve red lines of Ulaanbaatar city's road network according to relevant procedures.	2.0	City budget	MCUD, Governor's Office of the Capital city	2017
60	20.5. Study the heavily congested roads and define the cause.	-	-	MCUD, MJHA, MRTD, Governor's Office of the Capital city	2017
61	20.6. Must follow principles of standards and rules should be included in the law on Conflict and the law on Crime.	-	-	MJIA, MRTD	2017
62	20.7. Approve "Growth pillar – Road infrastructure" by Mongolian government and implement.	-	-	MCUD, Governor's Office of the Capital city	2017-2020
	21. Decrease traffic load in the city center by introducing "user pays" traffic congestion pricing/charge system:				
63	21.1. Prepare draft law on Parking and adopt and implement the law.	5.0	-	MRTD, MCUD, Governor's Office of the Capital city	2017-2020
64	21.2. Build gradually paid parking facilities in Ulaanbaatar city in cooperation with private companies.			Governor's Office of the Capital city	2017-2020

65	21.3. Increase Road fund by introducing paid parking in Ulaanbaatar city.	5.0	-	Governor's Office of the Capital city	2017-2020
66	21.4. Include congestion pricing system in the draft law on Parking and adopt the law.	-	-	MCUD, MRTD	2017
67	21.5. Allocate budget from State budget for technologies that enable congestion pricing system.			MOF, MRTD, MCUD, Governor's Office of the Capital city	2017
68	21.6. Create legal environment for introducing varied charges for using public roads and parking spaces depending on the zone and implement.			MCUD, MRTD, Governor's Office of the Capital city	2014-2016
69	21.7. Do the preparation work of building underground parking facility in 7 spots of Ulaanbaatar city.			Governor's Office of the Capital city	2017-2020
	22. Increase number of safe crossovers for pedestrians in bigger cities, for example build crosswalk, tunnels, footbridges for pedestrians, improve traffic light regulation:				
70	22.1. Prepare the design and plan of building underpass and footbridges for pedestrians in Ulaanbaatar city.	160.0	City budget	Road Department of Capital city	2017-2020

71	22.2. Build gradually pedestrian underpass and footbridge on railway crossing and on main roads in Ulaanbaatar city.		City budget	Road Department of Capital city	2017-2020
72	22.3. Do study on current crosswalks and overpasses and increase the quality and number of the crosswalks and the overpasses.			MRTD, MCUD	2017-2020
	23. 23. To meet the dimension and load of vehicle to requirement of international convention and approving the standard and technical regulation for heavy machinery:				
73	23.1. Establishing the registration centers with equipment to weigh weight of vehicle on the road gates of Ulaanbaatar	2000.0	State budget	MRTD, GDPI Governor's Office of the Capital city and Provinces	2017-2020
74	23.2. Controlling transportation in urban by mobile weighs				
75	23.3. Equipping the road gates with control weighs				
76	23.4. Installing a weighs on every road with 100 km length			MRTD, GDPI Governor's Office of the Capital city and Provinces	2017-2020
77	23.5. Arranging a monitoring at least 3 times to meet the dimension and load of vehicle to requirement of international convention	-	-	MRTD, MJIA	2017-2020

				GPD, GDPI	
	24. Planning the road design to provide safety of disabled people, older people, children, pedestrian and passenger of motor bike and bicyclist while constructing a road:				
78	24.1. Approving standard of side way and side way elements for disabled people	5.0	Fund for Norms	MRTD Governor's Office of the Capital city	2017-2020
79	24.2. Planning the walk way and safety zone design for disabled people while planning new roads	-	-	MRTD, Center for Road and transport development	2017-2020
	25. Establishing the safety zone for pedestrian, bicyclist and passenger of motor bike in city and near area of city (in possible area):				
80	25.1. Establishing the cycle ways in Ulaanbaatar city	18'000.0	State budget	MRTD Governor's Office of the Capital city	2017-2020
81	25.2. Establishing the safety zones, walk ways and cycle ways for pedestrian and bicyclist	2500,0	State budget, Projects	MCUD, MRTD Governor's Office of the Capital city	2017-2020

	26. Integrated development of the Intercity and Urban transport networks and services, ensure harmonization of transport modes (road transport, railways, civil aviation), separation of traffic between intercity and within the cities (bypass of intercity traffic):				
82	26.1. Develop draft Law on Integrated transport	-	-	MRTD	2017-2018
	27. Create public transport system that supports and has high competitiveness, create heavy duty transport mode and provide coordination of bus, minibus operations with taxi services:				
83	27.1. Support public passenger transport system /support with taxation policy/. Introduce BRT in the Public transport systems	-	-	MRTD, MCUD, Governor's Office of the Capital city	2017-2020
84	27.2. Conduct survey on route networks of the Ulaanbaatar city public transport, eliminate overlaps of routes, take measures to reduce traffic density	-	-	MRTD, Governor's Office of the Capital city	2017
	28. Monitor traffic, particularly the city center, regulate usage of road vehicles sections with heavy traffic:				
85	28.1. Formulate and utilize the camera standard for traffic control	2,2	State budget	MCUD, MRTD, MJIA	2017-2020
86	28.2. Investigate and study reasons of road parts that impedance increases, accelerates, establish the camera monitoring and speed measuring equipment system to the road	-	-	MRTD, MJIA	2017-2020
87	28.3. Introduce complete solution to decrease impedance and increase capacity of the road	-	-	MCUD, MJIA, Governor's	2017-2020

				Office of the Capital city	
	29. Traffic monitoring system to be coordinated in conjunction with the road length, number of road vehicles:				
88	29.1. Increase the number of staff, vehicle, control posts to implement the indication of Mongolian government resolution 153 of 2011	-	-	MJIA	2017-2020

Pillar 3. Use of Safe vehicles

	30. Create Legal environment to assemble and produce road vehicles:				
89	30.1. Accede to a convention “concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions”	-	-	MRTD, MOFA, MJIA	2017
90	30.2. Supporting to import equipment and parts which required to assemble and produce a vehicle /support by taxation policy/	-	-	MOF, MRTD	2017-2020
91	30.3. Translating and adopting the international technical regulations and determining need to assemble and produce a vehicle		State budget, Projects	MRTD, MOFA	2017-2020
	31. Analyze international standards of requirements for road vehicle, enable to approve the standards needed:				

92	31.1. Decide a finance to translate and adopt Euro standards from 2017 to 2020 step by step		State budget, Projects	MRTD	2017-2020
93	31.2. Translating and adopting Euro standards from 2017 to 2020 step by step			MRTD	2017-2020
94	31.3. Studying on international conventions for use and produce a vehicle and to accede a convention needed		State budget, Projects	MRTD, MOFA	2017-2020
95	31.4. Improving registration and control system of motor cycle and publishing a guidance of motor cyclists		State budget, Projects	MRTD MJIA	2017-2020
96	31.5. Reviewing number plate of road vehicle, MNS 4410:2002	-	-	MRTD	2017
	32. The following ways will be used to renew vehicle fleet of Mongolia: а) Reforming the import policy of vehicle and limiting import of vehicle with used more than 6 years; б) Steering wheel position of all vehicle will be changed to meet right hand traffic; в) Reforming the import policy of equipment and pats to provide vehicle users an original parts by supporting financial and tax policy:				

97	32.1. Decreasing a mileage of vehicle of Mongolia /supporting by tax policy/	-	-	MOF, MRTD	2017-2020
98	32.2. Forbidding the vehicles meet the requirement left hand traffic, parts without document and brake pads included asbestos	-	-	MOF, MRTD	2017-2020
99	32.3. Starting an activity to take service and products meet to conformity requirements	-	-	MRTD, Governor's Office of the Capital city, MRTC	2017-2020
100	32.4. Establishing the overall laboratory for test and conformation	-	-	MRTD, MRTC	2017-2020
	33. Establish an integrated system "Service- Diagnosis – Monitoring" by the development of vehicle maintenance database :				
101	33.1. Accomplish legal environment for establishment of vehicle maintenance database	80.0	National budget and projects	MRTD, Information Technology Agency, Governor's Office of the Capital city , National Road Transport Center	2017-2020
102	33.2. Establish human resource database, survey qualified staff that needs to be trained, retrained, and organize actions to give an advanced training with related organization.				
103	33.3. Formulate and take actions for feasibility study (техник эдийн засгийн үндэслэл) of software database for auto service organizations				
104	33.4. Establish integrated database structure for auto service organizations. Audit overall auto service organizations, set levels,				

	formulate reference tariff, establish structure for affordance of quality assurance				
	34. Create legal environment for Mongolian conditions to use traffic monitoring comprehensive system based on mobile GSM, satellite GPS systems:				
105	34.1. Provide setup and service for GPS based control system to the organization's vehicles, interested person, professional transporter's truck that heavily loaded, lengthy, massy, and to the urban, inter-city, inter-province public transport system.	-	National budget and projects	MRTD, Governor's Office of the Capital city and Provinces	2017-2020
106	34.2. Implement "establishment of express coordination center network" project in the projected time, and control vehicle activity in nationwide,				
	35. Classifying vehicle service companies to control and to support activity of vehicle service company:				
107	35.1. Approving the regulation and norm for import, assembling and producing the vehicles and parts.	10.0	Улсын төсөв төсөл арга хэмжээ	MRTD, Governor's Office of the Capital city	2017-2020
108					

109	36. . Supporting activity for adopting passing beam and steering wheel position to meet right hand traffic order to decrease number of vehicle designed for left hand traffic:				
110	36.1. Supporting activity for adopting passing beam and steering wheel position to meet right hand traffic order to decrease number of vehicle designed for left hand traffic	1’500.0	State budget, projects	MRTD, Province Governors	2017-2020
111	36.2. Approving a draft to limit an import of vehicle designed for left hand traffic	-	-	MRTD, Governor’s Office of the Capital city	2017-2020

Pillar 4. Measures for road users

	37. Develop and implement training program on traffic safety nationwide in all levels of education:				
112	37.1. Develop road traffic safety training module program and organize informal form, develop and distribute relevant manual, and reflect in the curriculum of the preschool and high school education institution.	-	ADB	MECSS, NGO	2017-2020
113	37.2.Based on the experience of the higher developed countries to create the conditions which attend driving school training to the age of 18 in the Technical and Vocational Education and Training	-	The state budget, projects	MECSS, MLSP,	2017-2020

114	37.3. To organize for all educational levels informal training which will develop traffic safety skills and attitude	-	-	MECSS, MLSP, NGO	2017-2020
	38. Appropriate city planning, prevent child traffic related incidents by providing traffic safety around schools:				
115	38.1. Implement projects (create a friendly environment for disabled children) and activities (entrance and exit roads, parking area, school bus stop, limiting speed, improve visibility, improve the learning condition for disabled children) to improve 5-9 high schools environments with lack of traffic safety.		Capital budgets and foreign aid	MLSP, City governor's office	2017-2020
	39. Improve system for preparation of drivers and licensing process:				
116	39.1. Implement some proposals to improve preparation of driver and their professional qualification system;		Capital budgets and foreign aid	MLSP, MES, MRTD, MJIA, Media agency	2017-2020
117	39.2. Increase training time for awareness, ethics, physical and psychological features in the driver training and qualification courses;				
118	39.3. Involve drivers of public transportation and heavy-duty vehicle to scholarship program		Labor funds	MRTD, MLSP,	2017-2020
119	39.4. To create a center for vehicle driver and professional driver testing.	3,5000,0	The state budget, projects	MRTD, MLSP,	2017-2020
	40. Improve measures for driver who violated the regulation, strengthen accountability system for traffic participants:				

120	40.1. Develop the regulation of measures for driver who violated the rule, strengthen accountability system for road users and implement some relevant provisions in the Violation Law.	-	-	MJIA	2017
121	40.2. Improve measures for driver who violated the regulation by accountability system	-	-	MJIA	2017
	41. Within the framework of the prevention work against traffic accidents support civil organizations' activities and broaden the cooperation to provide legal education and form awareness and culture for citizens on traffic safety:				
122	41.1. Support and expand cooperation the activities of civil society organizations which are working to prevent traffic accident doing the awareness campaign among the citizen and improving their traffic safety knowledge and culture. Organize at least 3-time discussion, 3 scientific conferences, and at least 10 inspection work.			MECSS, Ministry of Health, MJIA, General agency for specialized inspection, General police department Governors	2017-2020
123	41.2. Cooperation with media agency to prevent traffic accident doing the awareness campaign among the citizen and improving their traffic safety knowledge and culture			MJIA, MECSS, MOH, MRTD Governor, The media agency NGO	2017-2020

124	41.3. Study on possibility to transfer to civil society some of the state's role to prevent traffic accident doing the awareness campaign among the citizen and improving their traffic safety knowledge and culture	-	-	MJIA, MECSS, MRTD, Ministry of Health, Governors, NGO	2017-2020
125	41.4. Develop traffic safety education curriculum and implement it all levels of education.	-	The state budget, projects	MECSS, MLSP, NGO Governors, media agency	2017-2020
126	41.5. Improve the city road users behavior, habits, and attitudes, to promote public knowledge, skills and awareness campaign to ensure traffic safety and use media tools to give people more understanding about traffic safety and support this work.	20.0			
127	41.6. Multi-media through constant promotion of participation in cultural traffic community	20.0	Local budget Projects	Governors, media agency, NGO	Regularly
128	41.7. Regularly, rapidly deliver real-time traffic information through media such as FM, TV, and newspaper	40.0			Regularly
129	41.8. Regularly conduct campaigns about child seat, helmet, safety belt which are prevent to harm to the life and health during the traffic accident.	-			Regularly
	42. Restricting driving with not using a helmet, child restraint system and prohibiting a driver with drunk and using a phone while driving;				

130	42.1. Adding a clause for restricting driving with not using a helmet, child restraint system and for prohibiting a driver with drunk and using a phone while driving	-	-	MJIA	2017
131	42.2. Organizing a campaign at least 5 times to restrict driving with not using a helmet, child restraint system and for prohibiting a driver with drunk and using a phone while driving	-	-	MJIA, MOH	2017-2020
	43. Establish an examination center to reduce human factors while taking driver's examination:				
132	43.1. Study experiences of South Korea and Sweden on establishment of an examination center to reduce human factors while taking driver's examination			MRTD, MJIA, MECSS, NGOs	2017-2020
133	43.2. Develop and implement proposals on improvement of systems for preparation of drivers and their retraining			MRTD, MJIA, MECSS, MLSW	2017-2020
134	43.3. Newly establish an examination and training center for drivers and professional drivers	10'000.0	State budget, projects	MRTD, MJIA, MLSW, Governor's Office of the Capital city	2017-2020

Pillar 5. Post-accident aid, service

	44. Provide doctors, medical staff and specialists in related organizations with handbooks, guidelines on measures and actions to be taken during accidents and injuries:				
135[1]	44.1. Provide doctors, medical staff and specialists in related organizations with handbooks, guidelines on measures and	15,0	Health Promotion Foundation	MOH, Red Cross Committee	2017-2020

	actions to be taken during accidents and injuries. Develop manual and write memorandum between police and other organizations and deliver it to medical staff.			Public Health Institute	
136	45. Include traffic participants in insurance system, establish financial sources for victims of accidents for recovery and rehabilitation process:				
137	45.1. To involve road users to insurance system, study on how to create fund which will use for treatment of victim road accidents;	-	-	MOH, MLSP	
	46. Take measures to improve fist emergency aid response to victims of traffic accidents and specific medical assistance:				
138	46.1. Develop clinical practice guidelines and medical aid standards to provide medical care during the incident and investigation work;		State budget and project activities, health promotion fund	MOH, Red Cross Committee NTORC	
139	46.2. To increase and upgrade tools, a list of medicines and medical devices and medical vehicles to him;			MOH, Center for health development	
140	46.3. Implement ambulance services for helicopter and airplane;			MOH, Red Cross Committee	
141	46.4. Organize training about how to provide first aid to victims of road traffic accidents with Red Cross Committee	-	-	Red Cross Committee	
142	46.5. Under public-private partnership victims of traffic accidents, injured people select the tender to private hospitals to provide care and services		National Health	MOH, Public Health Institute	

			Insurance Fund	Governors	
	47. Establish investigation system for accidents and injuries:				
143	47.1. Improving software to create injury surveillance system;		State budget	MOH, NTORC, Center for health development	
144	47.2. Create quality management system of emergency medical system ;		State budget	MOH, Center for health development , NTORC, Red Cross Committee	
145	47.3. Improve methods, procedures, records and databases to register the number of people dead and injured in traffic accidents;		State budget	MOH, MJIA	
	48. Establishing emergency response system in all settlements for traffic accident victims:				
146	48.1. The reorganization of the central stage, and specialized hospitals and regional health centers and general hospitals and emergency units; Work step by step to imporve capacity of soum hospitals along the national highway;		State budget, National Health Insurance Fund	MOH	
147	48.2. To increase the capacity of health institutions of soums along the "Millenium Road", AH-3 and AH-4		State budget, National	MOH, Public Health Institute	

			Health Insurance Fund		
148	48.3. Governors of each of the provinces and cities implement in the every year's report to reflect detailed activities to improve emergency aid to road accident victims	-	-	MOH, Governor's office of province and city, Health center	

Annex G – Small Surveys