

Final Report 8th July

Road Safety in Bangladesh

Ground Realities and Action Imperatives

A PPRC Report

Report Commissioned by
BRAC



Preface

Road accidents are the new 'epidemic' sweeping across much of the developing world. For Bangladesh too with its rapid urbanization and exponential growth of transport networks, safety on the roads has emerged as an inescapable priority. BRAC with a strong record of engagement on the issue commissioned Power and Participation Research Centre (PPRC) to undertake a causal study on road safety to inform an appropriate advocacy strategy on this crucial national concern. PPRC with its long track record of innovative research on issues of national priority carried out study during late 2013 and early 2014. A team comprising of Dr. Waliur Rahman of RHD, Motiar Rahman and K. Baksh Chowdhury formerly of Bangladesh Police, Dr. Abul Hossain, K. Shakhawat Ali, and Ambassador Liaquat Ali Choudhury carried out various components of the study under the leadership of PPRC Executive Chairman. PPRC field research team and data management team undertook the burden of field research and data analysis for the study. Excellent co-operation was received from the BRAC team as well as a host of interviewees and FGD participants from various stakeholder groups including former chairman BRTA, ARI Director and his colleagues, Professor Tahmina Banu and Dr. QausarulMatin of Chittagong Medical College and Hospital. The report was finalized by Hossain Zillur Rahman with assistance from Liaquat Ali Choudhury.

It is our belief that the report will serve to sharpen the road safety agenda for Bangladesh and also enable the Government of Bangladesh and its related departments as well as BRAC and other stakeholders to pursue a pro-active advocacy and action agenda on making roads in Bangladesh more safe.

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Dhaka, July 7, 2014

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Why is Road Safety a Major Concern?

37.7 *A new epidemic?*

At the turn of the century, global leaders set an ambitious goal for humanity encapsulated in the now ubiquitous MDGs or millennium development goals. As the end date of 2015 for realizing those goals nears, there are justifiable grounds for celebration. Many of the scourges of the past such as diseases and epidemics have either been eliminated – polio – or are being tamed – malaria, HIV/AIDS etc. In Bangladesh, anti-diarrheal deaths have been drastically reduced. However, as these successes are celebrated a new epidemic has reared its head. Road accident is a new epidemic blighting the developing world. The World Health Organization (WHO) has identified road traffic injuries as the eighth leading cause of death globally and the leading cause of death for young people within the age bracket 15-29.

The numbers underscore this unsettling development: over 1.24 million annual deaths due to road accidents and an additional 20 to 50 million non-fatal injuries that often lead to economic ruin for the affected families.¹ The bulk of these road traffic deaths are in the low and middle income countries: 18.3 and 20.1 per 100,000 population in low and middle income countries respectively compared to 8.7 deaths per 100,000 population in high income countries.²

1.2 *Consequences not just humanitarian but also economic*

The calamity of road traffic accidents is not only humanitarian but also economic: road traffic injuries are estimated to cost low and middle-income countries between 1-2% of their GDP at about US\$100 billion annually.³ The prospect of economic ruin looms large particularly for poor and vulnerable households who are unable to withstand the loss of earning members of the family or bear the cost burden of post-accident care. Death is not the only tragedy emanating from road accidents. Earlier cited WHO report of 2013 points out that for every road fatality, there are at least 20 people who sustain non-fatal injuries.⁴ Each of these survivors and their families may also be facing economic ruin in the absence of adequate support for post-accident medical care. A further element of worry is that non-fatal injuries are poorly documented so that the actual scope may be much higher.

1.3 *Road fatalities are not inevitable*

As mobility becomes a necessary marker of progress for the new aspirational classes multiplying across the developing world, motorization and the concomitant issue of road safety assumes ever greater significance. Some could argue that the new epidemic of road traffic fatalities is an unfortunate price of growth-inducing road development. Developments on the ground belie this argument. Since the joint launch of the World Report on Road Traffic Injury Prevention by the World Health Organization (WHO)

¹ World Health Organization, *Global Status Report on Road Safety 2013*, Geneva

² *ibid*

³ *ibid*

⁴ *ibid*

and the World Bank in 2004, the annual toll of over a million road traffic deaths has not declined but neither have they soared despite a 15% global increase in the number of registered vehicles. Eighty-eight countries saw a reduction in the number of deaths between 2007 and 2010 whereas another group of eighty-seven countries – primarily low and middle income countries – saw an increase in their road deaths over the same period.⁵

1.4 *Urgency of prioritizing road safety*

Such statistics underscore the fact road deaths are not an inevitable concomitant of development but in fact can be addressed and minimized through judicious and timely action. Indeed, the WHO 2013 report on road safety projects saving of 5 million lives over the decade 2010-2020 if remedial action is implemented.⁶ The global community has responded to this realization: in 2010 UN General Assembly adopted resolution 64/255 which proclaimed a Decade of Action for Road Safety (2011-2020). The resolution calls for action at global and national levels and also for monitoring progress on the ground. Bangladesh is one of the countries at risk in this regard. Not only are the statistics a cause of concern but the policy discourse too appears not to have prioritized the issue adequately. This report undertakes a reality check on the trends at work as well as assesses what remedial actions have been initiated and more importantly what remains to be done.

⁵ ibid

⁶ ibid

PPRC-BRAC Study on Road Safety

2.1 *Objective of the Study*

The issue of road safety has long been a BRAC priority. With rapid urbanization, spread of transport networks and accidents frequenting headlines, greater attention to the issue has arguably become a key national priority. This, however, appears unlikely to happen without a strong effort at policy advocacy. Responding to this imperative, BRAC has commissioned PPRC, a policy research centre, to undertake a holistic Causal Analysis of Road Safety Study. In undertaking the study, PPRC too, with its strong track record in policy research, has found the task very timely as it feeds effectively into its chosen priority issues of sustainable urbanization and governance that works.

General objectives

- 37. Provide a researched understanding of the state of road safety in Bangladesh and the causal factors impinging on it, and,
- ii. Extract key advocacy issues from this researched knowledge for a scaled-up advocacy campaign.

Specific objectives

- Identify the range of factors, including economic imperatives, regulatory and governance failures, and behavioural deficits that render roads severely unsafe in Bangladesh.
- Develop an institutional landscape of key actors and stakeholders whose engagement is central to any effective redressal of unsafe roads.
- Situation of road traffic injury care, rehabilitation and institutional support of victims and households.
- Through a wide-ranging consultation process, establish a holistic road safety agenda and action plan that can inform and shape a major advocacy initiative.

2.2 *Scope*

A multitude of factors impinge upon the issue of road safety. Key issues covered in the study include:

- Engineering aspects of road safety
- Road and traffic laws
- Traffic management and enforcement
- Vehicle management

- Road-users: drivers and pedestrians
- Accident trends and accident investigation
- Victim care and support
- Governance and political economy of the road transport sector
- Advocacy challenges.

2.3 Research strategy

The Study followed a mixed-method approach with primary emphasis on qualitative approaches. There were four research components (Table 1.1):

Table 1.1
Research Strategy

<i>Component</i>	<i>Scope</i>	<i>Details/Remarks</i>
Component 1 Desk Review	<ul style="list-style-type: none"> - Engineering related issues - Road and traffic laws - Traffic management and enforcement issues - Road safety education and awareness strategies - Vehicle-management-related issues - Driver licensing and training related issues - Accident data-base - Post-accident related issues - Political economy analysis 	<ul style="list-style-type: none"> • An extensive inventory of literature on the subject was compiled (Annex 5) • The review task was distributed amongst the research team members as per their area of expertise • Literature on some issues such as pedestrian behavior has been scanty
Component 2 Consultations	• FGDs	<ul style="list-style-type: none"> - Community FGDs on selected routes - Drivers - Police personnel - Transport owners
	• Institutional consultations	<ul style="list-style-type: none"> - Accident Research Institute (ARI), BUET - R&H Department - LGED
	• Key informant interviews	<ul style="list-style-type: none"> - Former Chairman, BRTA - Founder, NirapadSarak Chai Andolon - Transport union leader - Trauma doctor
Component 3 Survey of drivers	<ul style="list-style-type: none"> • Questionnaire survey of 102 drivers selected from six bus/truck/taxi terminals in Dhaka city (questionnaire annexed at Annex 5) • Sample included 52 bus-drivers, 15 mini-bus drivers, 25 truck drivers and 10 rent-a-car drivers • Sampling methodology followed a stratified cluster sampling (stratification 	<ul style="list-style-type: none"> - Gabtoli bus terminal - Mohakhali bus terminal - Kawranbazar truck stand - Sayedabad bus terminal - Moghbazar rent-a-car stand - Aminbazar truck stand

	<p>criterion: vehicle type, cluster choice criteria: geographic spread) approach in which individuals were randomly chosen in each cluster and finalized on the basis of willingness and availability</p>	
<i>Component 4</i> Site research	<ul style="list-style-type: none"> Two highways were chosen for the site research 	<ul style="list-style-type: none"> - Dhaka-Aricha highway - Dhaka-Tangail highway
	<ul style="list-style-type: none"> Two spots were chosen in each of the selected highways 	<p><i>Dhaka-Aricha:</i></p> <ul style="list-style-type: none"> - Savar bazar - Tepra bazar & Uthali bazar, Manikganj <p><i>Dhaka-Tangail:</i></p> <ul style="list-style-type: none"> - Chandra Mor, Kaliakor - Taratia bazar to Bamnamor, Tangail
	<ul style="list-style-type: none"> 3 tasks in each spot 	<ul style="list-style-type: none"> - Community FGDs - Observation report - In-depth interviews

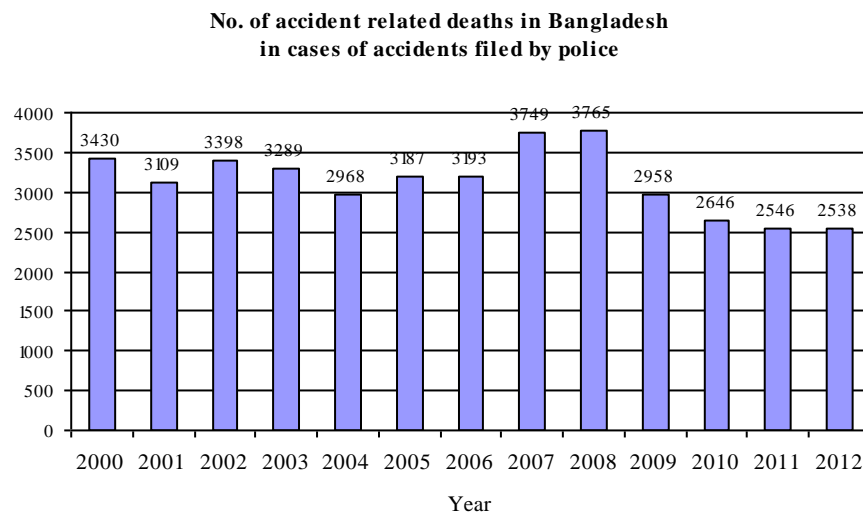
Road Accidents in Bangladesh: Magnitude and Trends

3.1 Magnitude of the problem

Relevant data on road accidents in Bangladesh is based on a single data source namely police data and the same processed and made available by the Accident Research Institute of Bangladesh University of Engineering and Technology (BUET), Dhaka. The recording process is activated if a police case is lodged regarding the accident. This may not always happen if affected parties are reluctant to become embroiled in police procedures or are otherwise disinclined or if police themselves fail to record the case. There is thus an in-built element of under-reporting whose magnitude and variation is difficult to assess. However, if the accident results in spot fatalities a police case is likely so that data on fatalities can be taken to be a reasonable approximation of realities. The same is not true for non-fatal injuries for which data is poorly recorded but whose economic consequences can be grave for the affected parties.

Figure 1 and Annex Table A1 describes the trend in accidents in Bangladesh based on police cases. During the period 2000-2012, annual average of road deaths as recorded in police records stood at 3137. As per the police data, recent years have seen a slight drop in the number of road deaths.

Figure 1



The incidence of recorded fatalities is low by international comparison but the possibility of under-reporting has to be kept in mind. The WHO 2009 report on road safety had suggested fatalities nearer to 20,000. Be that as it may, most available studies tend to stress that road accidents data are likely to be indicative and not comprehensive due to weaknesses in data recording. An authoritative BUET study⁷ makes the following pertinent observation in this regard:

⁷ Ahsan, H.M., M.A. Raihan, M.S. Rahman & N.H. Arefin, BUET, 'Reporting and recording of road traffic accidents in Bangladesh' in *4th Annual Paper Meet and 1st Civil Engineering Congress, December 22-24, 2011, Dhaka, Bangladesh*

‘----- the current Accident Report Form (ARF) is not comprehensive enough to conduct an in-depth investigation. The form contains 69 fields of information from which only the characteristics analysis of accidents can be carried out. ----- the form is quite hard for the police officers to understand and they are unable to fill it properly. Pictures are very important for post accident investigation but in the form there is no field to include such type of information. ----- police officers do not have the option to take photographs of the accident scenario because the police stations do not have any camera to capture the moment. In order to identify the accident spots police is using an old chainage inventory prepared in 1996 which is incapable of identifying the actual locations ----. Furthermore, police stations record those accidents only in which cases are filed but in most cases, the accidents that occur in our country everyday, no cases are filed at police stations and subsequently no records are documented’.

Mindful of the possibility of under-reporting as indicated above, reports based on newspaper scanning was also looked at as prepared by the advocacy group NirapadSarak Chai (Table 3.1). This gives a higher figure of 5162 accident related deaths in 2013 which also include deaths en route to hospital and deaths after release from hospital. Actual figure could be higher. Indeed, focus group discussions during site research on Savar and Tangail highways carried out as part of this study indicated that typically more than half the incidence of accidents may go unreported.

Table 3.1
Accident Data, 2013 as scanned from 4 national dailies

<i>Variable</i>	<i>Number</i>
No. of accidents	2750
No. of injuries	8914
No. of deaths	3462
No. of deaths en route to hospital	891
No. of deaths after release from hospital	809
<i>Total accident deaths in 2013</i>	<i>5162</i>

Source: NirapadSarak Chai, Nirapad News (online news portal)

3.2 Fatality index : Accident trend vis-à-vis vehicle growth

The trend in the magnitude of the problem of road accidents can also be seen through a juxtaposition with the growth in the number of vehicles on the road. Table 3.2 describes the growth in the number of vehicles on the roads and the corresponding incidence of accidents during the same period. During 2000 and 2011, number of vehicles on the roads grew from 0.45 million to 1.28 million. The corresponding official accident statistics, however, show a plateauing rather than a rise. The number of road deaths per 10,000 vehicles thus shows a drop from 76 in 2000 to around 20 in 2011 (Figure 2).

Table 3.2
Road deaths vis-à-vis Vehicles on the road

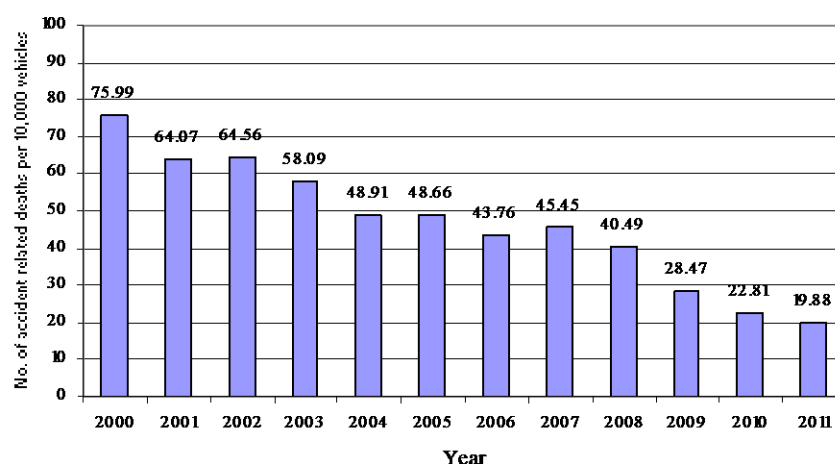
Year	No. of vehicles	No. of accident related deaths	No. of accident related deaths per 10,000 vehicles.
2000	451368	3430	75.99
2001	485228	3109	64.07
2002	526309	3398	64.56
2003	566194	3289	58.09
2004	606770	2968	48.91

2005	654964	3187	48.66
2006	729642	3193	43.76
2007	824948	3749	45.45
2008	929760	3765	40.49
2009	1038885	2958	28.47
2010	1159870	2646	22.81
2011	1280585	2546	19.88

Source: Vehicle data from Statistical Year Book of Bangladesh 2012, accident death data from police First Information Reports (FIRs)

Figure 2

No. of road accident related deaths per 10,000 vehicles



However, if the earlier point about under-reporting is taken into account, there can be no ground for complacency. Indeed, anecdotal and media reporting underline the continuing severity of the problem.⁸

3.3 Accident spots: A detailed analysis

Majority of road accidents in Bangladesh occur on the national and regional highways though a significant percentage also occurs on city streets.⁹ Table 3.3 describes the length of the road network in 2012.

Table 3.3

Length of Road Network, 2012

Road type	Number
National highways	3580
Regional highways	4276
Zila and Upazila road	13509
Total	21365

Source: Statistical Yearbook, 2012, Bangladesh Bureau of Statistics

⁸ Daily Star, *Forum* Issue 7, Volume 6, 2012; Daily Star, *the Star*, 14 March, 2014

⁹ Tahera Anjuman, Shahnewaz Hasanat-E-Rabbi, Chowdhury Kawsar Arefin Siddiqui and Md. Mazharul Hoque, 'Road Traffic Accident: A Leading Cause of the Global Burden of Public Health Injuries and Fatalities' in the *Proceedings of the International Conference on Mechanical Engineering 2007*, (ICME2007) 29-31 December, 2007 Dhaka, Bangladesh; Naila Sharmeen & Md. Rabiul Islam- 'Road Accidents: Contemporary Scenario and Policy Issues in Bangladesh' *Journal of Bangladesh Institute of Planners* Vol. 4. December 2011, pp. 45-55; Dr. Md. Mazharul Hoque et al, 2010, *Improving Highway safety in Bangladesh: Road Improvement and the Potential Application of iRAP*, Dept. of Civil Engineering, BUET (mimeo)

Data on location of accidents show five districts to have the highest number of accident deaths (Table 3.4). Each of these straddles the major national highways: Dhaka, Chittagong, Comilla, Tangail and Sirajganj.

Table 3.4
Districts with highest number of accident deaths in 2012

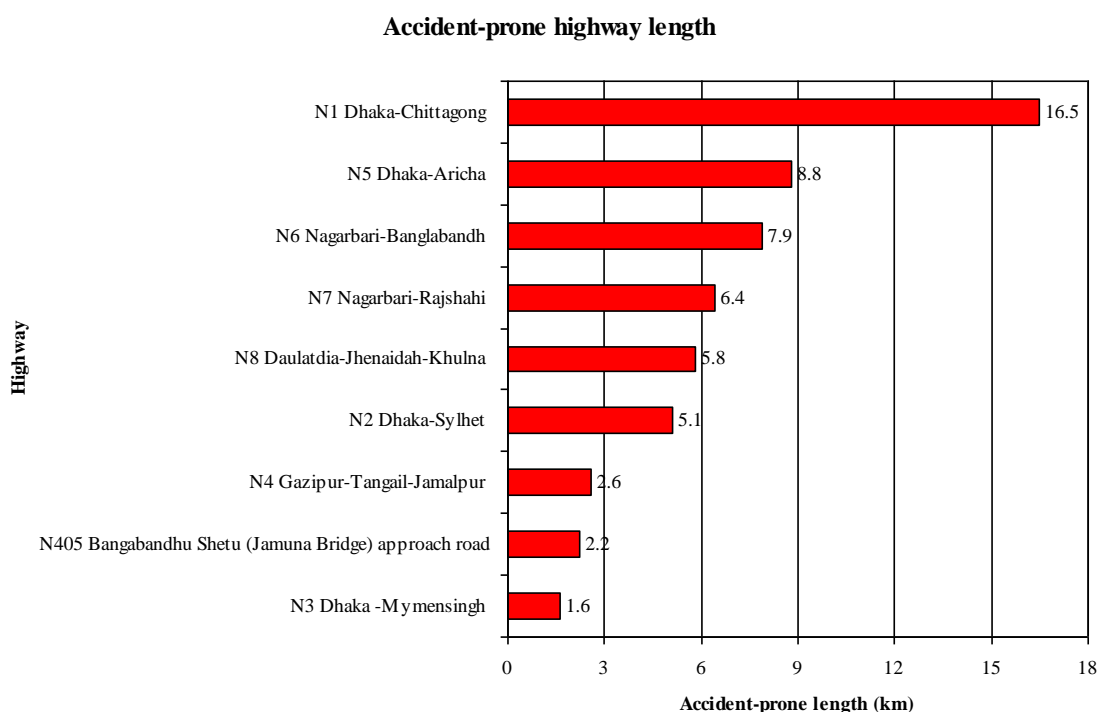
<i>District</i>	<i>Number of accident deaths</i>
Comilla	124
Dhaka	105
Tangail	102
Sirajganj	96
Chittagong	95

Source: Statistical Yearbook, 2012, Bangladesh Bureau of Statistics, p 220

Accident Research Institute has prepared a detailed list of accident spots which is appended as Annex 2. The accident spot data has been analyzed by the PPRC Study Team focusing on 5 spots in each of the major highways that recorded the maximum accident deaths (Annex 3). Two findings stand out.

Though most accidents occur on the highways, it is not the case that the entire length of the highway is accident-prone. The PPRC analysis shows that the ***bulk of the accidents were concentrated within a total length of only 54.7 kilometres of the highway network*** (Figure 3). The conclusion arising from this finding is that if vigilance and strict enforcement of traffic rules were to be applied to this length 54.7 kilometres of highway, incidence of accidents could decline dramatically.

Figure 3



Source: Analysis of ARI accident spot data by PPRC team member K. Baksh Chowdhury

The second finding from the PPRC analysis of the accident spot data is equally dramatic (Table 3.6 and Figure 4).

Table 3.6
Classification of Accident spots according to their type and identity

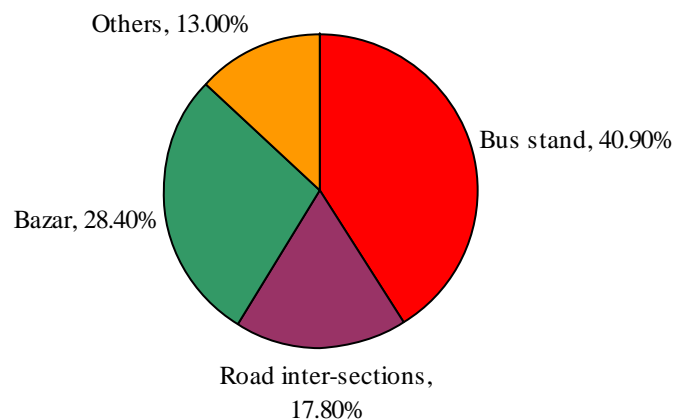
Name of the highway	Number of accident spots	Bus Stand		Road Inter section		Bazar		Others	
		no	%	no.	%	no	%	no	%
N-1 Dhaka-Chittagong	38	20	52.63	9	23.68	5	13.16	4	10.53
N-2 Dhaka-Sylhet	34	12	35.29	5	14.17	11	32.35	6	17.65
N-3 Dhaka-Mymensingh	10	0	0	3	30	5	50	2	20
N-4 Gazipur-Tangail-Jamalpur	14	2	14.28	3	21.43	7	50	2	14.29
N-5 Dhaka-Aricha	22	16	72.73	2	9.09	2	9.09	2	9.09
N-6 Nnaragbari-Banglabandh	38	17	44.74	8	21.05	12	31.58	1	2.63
N-7 Nagarbari-Rajshahi	24	6	25	3	12.5	13	54.17	2	8.33
N-8 Daulatdia-Jhenaidah-Khulna	16	4	25	4	25	3	18.75	5	31.25
N-9 Dhaka-Mawa-Barisal	4	3	75	0	0	1	25	0	0
N-405 Jamuna Bridge approach road	8	5	62.5	0	0	0	0	3	37.5
Total 10 Roads	208	85	40.87	37	17.79	59	28.36	27	12.98

Source: Analysis of ARI accident spot data by PPRC team member K. Baksh Chowdhury

Even though accidents are mostly on the highways, the actual spots on the highways where the bulk of the accidents occur are bus stands (41%), road inter-section (17.8%) and market-place (28%). Contrary to popular perceptions, it appears majority of accidents occur in crowded spots or inter-sections rather on isolated stretches of the highways. This again points towards where the priority for vigilance and traffic enforcement lie.

Figure 4

Classification of Accident spots



3.4 Accident timing

A BUET study covering the period 2000 to 2006 and utilizing police data on three major national highways – N1, N2 and N3 – provides some interesting insights into the time period during a day when incidence of accidents is comparatively higher.¹⁰ Table 3.7 summarizes the findings of the BUET study. Bulk of the accidents – 74.4% - occur during day-time (6 a.m. – 6 p.m.). Highest percentage of accident occurrence is during the time band 10 a.m. – 12 p.m. (15.5%).

Table 3.7
Timing of Accidents on Highways N1, N2 and N3

<i>Time period</i>	<i>%</i>
12 – 2 a.m.	5.7
2 – 4 a.m.	4.8
4 – 6 a.m.	7.5
6 – 8 a.m.	10.4
8 – 10 a.m.	10.2
10 a.m – 12 p.m.	15.5
12 p.m. – 2 p.m.	13.1
2 – 4 p.m.	11.9
4 – 6 p.m.	13.3
6 – 8 p.m.	6.3
8 – 10 p.m.	6.3
10 p.m – 12 a.m.	5.2
<i>Full day</i>	<i>100</i>

Source: Md. Mizanur Rahman et al, 2012, ‘Comparative accident study on some selected national highways of Bangladesh’, *International Journal of Civil Engineering (IJCE)*, Vol 1, Issue 2, November, 2012, pp, 7-14

¹⁰Md. Mizanur Rahman, Md. Shafikul Ahsan & Md. Hadiuzzaman, 2012, ‘Comparative accident study on some selected national highways of Bangladesh’, *International Journal of Civil Engineering (IJCE)*, Vol 1, Issue 2, November, 2012, pp, 7-14

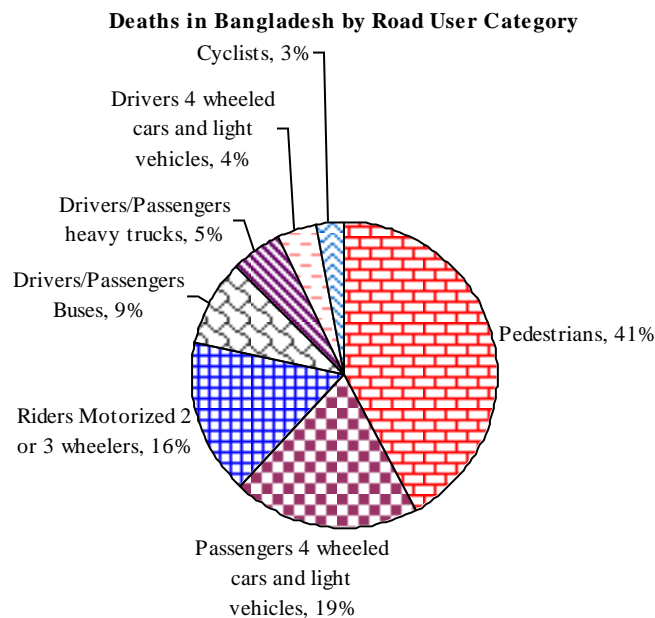
Victims and Perpetrators

4.1 Accident victims

Who are the victims of road accidents? Global data indicate that vulnerable road-users – pedestrians, motorcyclists and cyclists – constitute more than half of road traffic deaths.¹¹ Such percentages are comparatively higher in low and middle income countries where vulnerable road-users also include non-motorized transport users as well as users of motorized two or three wheelers. Bangladesh data confirms such a pattern.

Anjuman et al¹² suggest that pedestrians are the most vulnerable road user group in Bangladesh accounting for 49% of all reported fatalities in the accidents data base. The latest available police data of 2009 as quoted in the Global Status Report on Road Safety, 2013 confirm these observations (Figure 3). Pedestrians account for 41% of road accident followed by bus/car passengers (19%) and two/three-wheeler passengers (16%).

Figure 3



Source: Global Status Report on Road Safety 2013

¹¹ WHO, *ibid*

¹²TaheraAnjuman, ShahnewazHasanat-E-Rabbi, Chowdhury KawsarArefin Siddiqui and Md. MazharulHoque – ‘Road Traffic Accident: A Leading Cause of the Global Burden of Public Health Injuries and Fatalities’ in the *Proceedings of the International Conference on Mechanical Engineering 2007 (ICME2007)* 29-31 December, 2007 Dhaka, Bangladesh.

Data on the nature of accidents also confirm the preponderance of pedestrians among accident victims (Table 4.1).

Table 4.1
Accident Types

<i>Accident types</i>	<i>%</i>
Pedestrian hit	42
Head on collision	19
Over-turned vehicle	13
Rear-end hit	9
Side swipe	6
Others	11
All	100

Source: Md. Mizanur Rahman et al, 2012, 'Comparative accident study on some selected national highways of Bangladesh', *International Journal of Civil Engineering (IJCE)*, Vol 1, Issue 2, November, 2012, pp, 7-14

Inadequate recording of accident data poses a barrier to further analysis of victim characteristics. The BUET study¹³ of 2007 cited earlier offers some additional analysis suggesting the vulnerability of children to road accidents. According to this study, 21% of accident victims during the study period 1998-2005 were children. Another micro study on a district hospital (Sylhet) on road death victims indicated that 42% of the 100 road accident victims, 42% were in the age group 20-30 while another 22% were in the age group 10-20.¹⁴

There is not much of documentation of the economic consequences of road accidents. It is primarily media reporting that brings to occasional notice the silent ruin faced by families who have lost earners in the family or whose injuries have led to crippling financial burden. A few of such media reports are provided below.

¹³Ibid

¹⁴ R.N. Islam, M.A. Monsur& M. Asaduzzman, 2011, 'An analysis of 100 road traffic accident victims' in *Dinajpur Medical College Journal*, July 2011: 4 (2): pp 67-70



4.2 Accident Perpetrators

The relevant data and literature on road accidents in Bangladesh indicate relative over involvement of heavy vehicles i.e. trucks and buses in accidents.¹⁵ Data from police records for 2012 confirms these findings (Figure 4). Of the accident perpetrators in 2012, buses are the dominant vehicle category (38.1%) followed by trucks (30.4%). Motor-cycles account for 12% while cars/jeeps account for 10.5% and three-wheelers a further 9%. The comparative picture for each of the years 2000 to 2012 is described in Annex table A2.

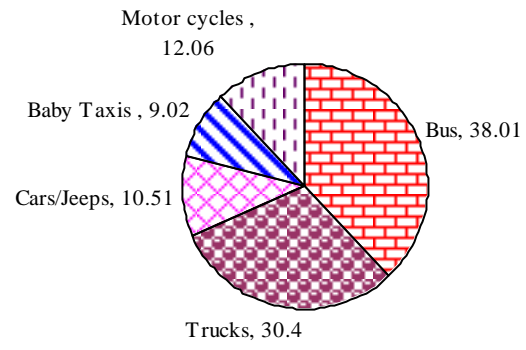
Recent research on road accidents also refer to operational hazards posed by new types of low cost vehicles known as Nasimons and Karimons plying on regional and rural roads.¹⁶ These indigenous vehicles are locally-assembled improvised three wheelers run by shallow diesel engine. They have high centre of gravity and inadequate braking devices and are often driven by untrained and occasionally under aged local youth. They pose a traffic risk while plying on highways. An even more recent addition to such risky transports is the battery-driven rickshaw increasingly seen on city streets. Anecdotal evidence from hospitals and clinics in major cities such as Dhaka and Chittagong suggest an increasing incidence of non-fatal but often severe injuries caused to the passengers of such transports due to the severely inadequate braking facilities of such transports.

Figure 4

¹⁵T. Anjuman et al, Ibid

¹⁶ ASMJ Chowdhury, MsAlam, SK Biswas, RK Saha, AR Mandol, MM Rahman and MA Khair- 'Road Traffic Accidents by 'Nasimon' and 'Karimon' –A Study in Faridpur Medical College Hospital', *Faridpur Medical College Journal*, 2012,7(1): 06-09

% share of vehicle types in accident



Post-accident Realities: Investigation, Medical Facilities and Victim Care

5.1 *Accident data*

The Road Traffic Accident database is being maintained and updated by BRTA and ARI on the basis of police MAAP (Micro-Computer Accident Analysis Package) information. Accident Report Form (ARF) was first introduced in 1995 and promoted through sectoral projects funded by The World Bank and DFID.¹⁷ The system was made nationwide by 1998. The responsibility of collecting the data devolved on the police department for whom the task became obligatory after the passage of Regulation 254(B). The software package MAAP5 for storing the accident related data was developed by the Transport research Laboratory of UK.

There are three components to the recording of the accident data: victim identity, vehicle particulars and circumstances of the accident. The ARF on which the data is recorded has been made an integral part of the First Information Report (FIR) filed by the police. The computerized data is shared with the Accident Research Institute (ARI) at BUET.

Though the police have been given the responsibility for recording the accident data, there has not been any corresponding effort to providing the necessary capacity, knowledge, equipment and competence to investigate the road accidents. Typically, the recording personnel inspects the vehicle that too after a considerable interval rather than the place of occurrence relying more on hearsay evidence rather than scientific investigation. It is not surprising that accidents rarely travel to courts of law due to the paucity of credible evidence.

The problem of under-reporting and of inadequate documentation is yet to gain policy priority amongst policy-makers. The initiative by the Indonesian government may be instructive here.

Box 1

Indonesia addresses under-reporting of accident data

In 2009, the Indonesian government initiated a multi-sectoral approach to improving the quality of data on road traffic injuries and under-reporting. A national law specifying new regulations for data collection was passed that included collecting and coordinating fatality data from multiple sources to supplement police data, in particular data from hospitals and from insurance companies.

¹⁷ H.M Ahsan et al, *ibid*

5.2 *Investigation and redress*

There are two clear legal responsibilities in the aftermath of accidents: i) investigation and ii) prosecution. FGDs with police personnel underscored a conclusion derived from other sources too that currently the investigation process is very weak with a marked absence of technically competent personnel. Poor investigation is one of the major causes of prosecution failures. There is no specialization on traffic management within the police. General police are rotated on such jobs. The investigation process is further weakened by the fact that management and enforcement are separate departmental responsibilities with poor or no coordination.

FGDs also brought out a disturbing trend, namely, a progressive weakening of legal provisions for punishing reckless drivers responsible for road accidents. FGD participants were frank in their assessment that the political economy is currently hostile to dealing rationally with investigating and prosecuting accidents.

5.3 *What happens after an accident: 3 case studies*

Case Study 1

Mr. Kamal (not real name), a retired high-ranking government officer, incurred an accident on 7 February, 2014 in front of Ramna Thana. Mr. Kamal's driver was at fault having hit another car in front. On arrival, police suggested amicable settlement on vehicle damage. Mr. Kamal's son-in-law, also a high-ranking educationist, arrived on the scene and paid 50% of the agreed amount to the other vehicle. Mr. Kamal himself was taken to the nearby Holy Family hospital but after a long wait was informed that necessary treatment was not available. Mr. Kamal, also an asthmatic patient, was taken to another hospital and after a three day stay in a cabin, was operated upon. Being well off, Mr. Kamal was able to afford the medical costs. The interesting twist here was that it was Mr. Kamal's own driver who caused the accident and necessitated the medical treatment. The driver had proved a bad driver previously too but had been kept in service because of loyalty to Mr. Kamal's family. Due to a previous accident, the driver had even injured his leg. While the family scolded him for his bad driving, they did not let him go because finding a good driver is difficult due to a great shortage of trained and reliable drivers. The car itself had no problem. Bad driving was the root cause of the accident.

Several lessons emerge from this case study:

- a. Finding a good and reliable driver is difficult in Bangladesh. Even though, family suffered due to the bad driving, they valued his loyalty and kept him in service.
- b. After an accident, if there is no fatalities, tendency is to promote amicable settlement on the question of damages.
- c. Police do not play any role in taking accident victim to hospital in normal cases.
- d. Though injury was not fatal, follow-up treatment has been necessary. Even though the family has been able to afford the treatment, the costs has impacted the family psychologically and financially.

Case Study 2

On October 22, 1993, JahanaraKanchan, wife of noted film actor, IlyasKanchan, met with a fatal accident while travelling from Dhaka to Bandarban where her husband was in a film shoot. She was travelling in a rent-a-car with her young children. Saving on time is often a priority for such drivers and unless strictly controlled the driving can be reckless. The driver was also overworked. Sudden appearance of a non-motorized transport on an isolated stretch led to a violent swerving by the driver leading to a fatal accident. There was no immediate facility for treatment and she died en route to the Chittagong Medical College Hospital. Since a police case would have required a post-mortem, the family avoided a police case on the incident. Police on their own did not file a report. However, the tragedy galvanized the husband to spearhead a civic movement on road safety which has graduated to a national advocacy platform under the name *Nirapadsarak Chai*. Eventually, their efforts led to the declaration of 22 October as the National Safe Road Day.

Case Study 3

On 13 August, 2011, noted film-maker Tareque Masud and cinematographer MishukMunir met with a fatal road accident while returning to Dhaka from Manikganj on the Dhaka-Aricha highway after visiting a filming location. His microbus collided head-on with an oncoming passenger bus. Tareque's wife Catherine Masud, painter Dhali Al Mamun, his wife Dilara Begum Jolly and film production staff Saidul Islam were injured in the accident. The victims were initially taken to nearby Manikganj hospital. After receiving primary treatment, the injured members travelled to Dhaka with the dead bodies. Severe traffic congestion delayed their journey but because of their national reputation, highway police assisted them so they could arrive at Square Hospital in Dhaka for emergency treatment. The event galvanized national attention so that the survivors were given the required treatment immediately. One of the survivors had to go to Bangkok for further treatment and eventually incur medical costs amounting to 65-70 lacs takas. Support came from both government and private sector. The key cause of this accident was faulty road design that had a dangerous curve where previous accidents had also occurred. Such *black spots* have now come in to focus and many have been made more safe. However, reckless driving was also a contributory factor with the colliding bus-driver trying for a reckless over-taking in rainy conditions.

Several lessons from this high-profile accident have emerged:

- a. Police have been pro-active in arresting offending driver and producing an investigative report. But such alacrity is more the exception than the rule.
- b. The importance of heli-lift for emergency treatment was underscored. It may be mentioned that two former Finance Minister died in road accidents in which emergency care could not be made available.
- c. For sending money abroad for medical purposes, the requirement for central bank approval is not known widely. This requires greater dissemination.
- d. Unused legal provisions have been pursued by the family of the victims. On February 13, 2012, two cases were filed before the Motor Accidents Claims Tribunal, Manikganj under section 128 of the Motor Vehicles Ordinance of 1983 and subsequently transferred to High Court Division under Article 110 of the Constitution. This ground-breaking civil case has brought to attention long-neglected legal

provision that make not only the driver but also owners and insurers liable for claims.¹⁸

5.4 Medical facilities and victim care

The impact of an accident on a victim can be both brutally short and agonizingly long. The impact is not only on the immediate victim but also on his/her family. Immediate needs include first aid, transportation, emergency medical treatment, and protection of people, vehicles, and public property. The longer-term needs can include long-term treatment, assistive devices, rehabilitation, psychosocial and emotional support, and economic support and employment. Tables 5.1 and 5.2 describe requirements of victims in the short and long-term and how these are optimally met.

Table 5.1
Short-term/Immediate needs of accident victims

<i>What are the services?</i>	<i>Who will provide them?</i>	<i>How?</i>
First Aid for victims	Nearby people	General first aid awareness campaign
	Vehicle staff	Train bus staff on first aid
	Road side petrol pump staff	Train petrol pump staff on first aid, and make all medical services (facilities) info available on site
	Roadside medical shops	Train medical shop staff
	Law enforcement agencies	Require a first aid box in each highway vehicle
	Representatives of adjoining Union Parishads	Equip Upazila and Union Level govt. health facilities on required immediate victim support
Transportation for carrying victims and immediate treatment	Nearby people, Vehicle, Petrol pump & Roadside medical shop staff	Provide general awareness on carrying victims
	Law Enforcement agencies	Involve law enforcement agencies in awareness campaign
	Insurance companies	Extend insurance coverage to cover immediate treatment and transport costs
Protect people, vehicles, and awareness on protecting public property	Law enforcement agencies	Provide general awareness on protecting people, vehicles, and public property
	Local leaders	Involve local government leaders in the protection of people and property following an accident
Compensation for victim	Legal aid agencies	Negotiate with insurance companies and transport companies

¹⁸ Daily Star, *the Star Magazine*, 14 March 2014, article by AmitavaKar, 'Putting a price on the priceless'

Table 5.2
Long-term needs of accident victims and their families

Victim

<i>What are the services?</i>	<i>Who will provide them?</i>	<i>How?</i>
Compensation	Courts, legal aid agencies	Compensation claims are allowed within law but has not been practiced. Precedent-creating judgments are necessary. Also people need to be made aware of the provisions within law that allows claims.
Long term treatment support	Government, family	Provide grants for rehabilitation
Appropriate assistive devices	Insurance companies	Extend insurance to cover devices
Rehabilitation	Social Activists	Social Rehabilitation fund
Psycho-social/emotional support	Social Activists	
Community support	Private initiatives	
Income generation skills for disabled	Social entrepreneurs, NGOs	Provide necessary skill training to victims

Family

<i>What are the services?</i>	<i>Who will provide them?</i>	<i>How?</i>
Employment for alternative suitable members	Government	
Education and skill support for suitable members	NGOs	

While the above spells out what is required for victim support, the more pertinent issue is the state of medical and support facilities now. The Global Status Report on Road Safety 2013 has some interesting information on post-crash care in Bangladesh. Information in this regard presented in the table below highlight a less than satisfactory level of post-crash care facilities/arrangement in Bangladesh (Table 5.3).

Table 5.3

<i>Post-Crash Care in Bangladesh</i>	
Vital registration system	Yes
Emergency Room based injury surveillance system	No
Emergency access telephone number(s)	No
Seriously injured transported by ambulance	≤10%
Permanently disabled due to road traffic crash	13%
Emergency medicine training for doctors	No
Emergency medicine training for nurses	No

In-depth interview of trauma doctor at the Chittagong Medical College and Hospital also brought out a number of interesting observations on the reality of post-crash care:

- Accident treatment has three stages: primary, secondary and tertiary. In Bangladesh, the secondary stage is missing.
- There are only a few trauma centres in the country. A policy decision to set up a few trauma centres alongside highways has seen the establishment of physical structure as for example at the trauma centre at Mirasari on Dhaka-Chittagong highway but it is poorly functional due to non-availability of equipment and manpower.

- Absence of medics is a problem. A medic is someone who can take care of emergency needs but need not be full time doctor.
- On the spot initial treatment in terms of stopping blood flow or providing CPR is a largely missing capacity. The first 6 hours after an accident is not surprisingly called the *golden hour* i.e. the period from the accident spot to tertiary care during basic treatment such as CPR or prevention of blood loss can determine the eventual chances of survival. An important issue here is general awareness on such basic treatment such as CPR on which training at school and among the general population via local governments and road-side market associations should be a priority.
- Many of the accident deaths occur during transfer. Transfer arrangement has to be a key focus of improvement.
- Major hospitals need to have disaster response teams within their organizational set-up.
- Actual layout of facilities in major hospitals have not given due consideration to emergency care. For example in the Chittagong Medical College and Hospital, emergency care unit is on ground floor while the orthopedic centre is on the 5th floor. An additional concern is obstructions in access ramps. Unruly traffic often hampers quick transfer of accident victims in to the emergency care room.
- Critical care medicine needs to be developed as a discipline. Management of severe trauma is an emerging specialization and adequate capacity in this regard needs to be developed within the country.
- Small steps can bring big dividends in terms of improving emergency care. For example, on-site preparation of ID tags which specifies name, age, blood group, immunization needs to be undertaken while the victim is still conscious.
- It is important to develop a universally valid national access emergency number much like 911 in the United States which people can access for signaling emergency..

Road-Users: A Survey of Drivers

6.1 *Introductory background*

Drivers loom large in the road safety agenda. Their quality, their adequacy, their attitudes and motivations, their sense of responsibility vis-à-vis rules and regulations as well the pressures under which they work have a strong bearing on how safe the roads are likely to be. It is thus important to know who the drivers are – their socio-economic profiles – as well as their viewpoints on the causes of accidents and how these may be better prevented. To this end, this Study undertook a purposive survey of drivers with two important sampling criterion in mind – i) vehicle types and ii) highway routes. A total of 102 drivers in the five major bus and truck terminals in Dhaka city plying on the major highway routes as well as key rent-a-car spots were surveyed. From the standpoint of sampling strategy, the terminals constituted the clusters while vehicle types constituted the stratification criterion. Within each cluster and vehicle category, the final choice of respondents followed the random principle. Details of the sample are provided in Table 6.1.

Table 6.1
Driver Survey Sample

Clusters		Vehicle types	Driver sample
Bus/truck stands	Rent-a-car spots		
<ul style="list-style-type: none"> • Mohakhali bus terminal • Gabtoli bus terminal • Sayedabad bus terminal • Amin Bazar truck stand • Tejgaon truck stand 	<ul style="list-style-type: none"> • Lake circus • Maghbazar • Mirpur 1 • Pallabi • Jatrabari 	<ul style="list-style-type: none"> • Bus • Truck • Covered van/mini-bus • Car 	<ul style="list-style-type: none"> • 52 bus drivers • 15 mini-bus drivers • 25 truck drivers • 10 rent-a-car drivers

6.2 *Driver Profiles*

Age

The overwhelming majority of the surveyed drivers are in the age bracket 24-50 with only 5% above the 50+ age range (Table 6.2). Nearly half (47%) are within a younger age bracket of 24-35 while 21% are within 36-40 years and the remaining 28% within the 41-50 age bracket.

Table 6.2
Age composition of drivers

<i>Age in years</i>	<i>%</i>
24-35	47.0
36-40	20.6
41-50	27.5
51 and above	4.9
<i>All</i>	<i>100</i>

Educational Qualification

Contrary to popular perception, 80% of the surveyed drivers had some education (Table 6.3). The single highest education group among the drivers was secondary or equivalent education (48%). Only 8% were wholly illiterate.

Table 6.3
Educational qualification of drivers

<i>Educational qualification</i>	<i>%</i>
Illiterate	7.8
Can read and write	11.8
Primary	30.4
Secondary/equivalent	48.0
SSC/equivalent	1.0
HSC/equivalent	1.0
<i>All</i>	<i>100</i>

Demographic profile: average family size and number of earners

The demographic profile of the surveyed drivers show that their family sizes are typically 3-4 (40%) or 5-6 (43%) (Table 6.4). However, the majority – 70% - are single earner families.

Table 6.4
Family size

<i>Family size</i>	<i>%</i>		<i>Number of earners</i>	<i>%</i>
1 member	1.0		1 earner	69.6
2 member	1.0		2 earners	21.6 7.8
3-4 member	40.2		3-4 earners	7.81.0
4-6 member	43.1		4-6 earners	1.0
7 and above	14.7			

Housing status

Of the surveyed drivers, only a miniscule – 4% - live in their own residence in Dhaka city (Table 6.5). A third – 33% - live in rented premises while another 21% live in rented dormitories popularly known as 'mess'. The largest group – 41% - is those who may have rural residences but sleep in the vehicles they drive while in Dhaka city.

Table 6.5
Housing status in Dhaka

<i>Type of residence</i>	<i>%</i>
Own residence	3.9
Rental house	33.3
Mess	20.6
Vehicle/Bus/Car	41.2
Others (Garage/hotel etc.)	1.0
<i>All</i>	<i>100</i>

Income status

Information was sought on the reported monthly income of the surveyed drivers. Average reported monthly income of the surveyed drivers stood at is Taka 21950. However, there is considerable variation in monthly income of the surveyed drivers (Table 6.6). The lowest monthly income bracket is Taka 10-15000 and this is enjoyed by 19% of the sample while a small percentage (3%) enjoy monthly income above Taka 50000. The largest group – 47% - belongs to the Taka 15-20,000 income bracket.

A corroborating information on the few high income earners indicates that they may also be owning a vehicle and having dual earning as driver as well as owner. One of the surveyed drivers revealed that he had obtained a taka 30 lac loan to purchase two vehicles for one of which he employs a driver while driving the other himself.

Table 6.6
Reported monthly income & mode of payment

Income range (taka)	%		Mode of remuneration*	%
10250-15000	18.6		Regular monthly salary	8.8
15001-20000	47.1		Monthly trip-based payment	85.3
20001-25000	15.7		Payment on a commission basis per month	11.8
25001-50000	15.7		Monthly meal/food allowance	22.5
50000+	2.9		Extra monthly income over monthly salary	54.9
All	100			
Average monthly income: Tk. 21950				

* Sum of percentages is more than 100 as some drivers had multiple responses

What the details in the above table do not capture is that most of the drivers do not have fixed monthly income. They earn more only if they make more trips on a contractual basis. As the table below shows only 8.8% of the respondent drivers have regular monthly salaries and 22.5% of them get monthly meal or food allowances.

Indebtedness

Nearly half of the surveyed drivers (45%) reported being in debt. Average debt for all surveyed drivers (minus the single one who had taken out a large loan of Taka 30 lacs to finance purchase of his own vehicles) stood at Taka 21822.

Self-assessed poverty status

PPRC has always found it useful to supplement economic status indicators of households by an indicator that provides household's own self-assessed poverty status. Findings on this indicator show that only 7.8% assess their own status as being of extreme poverty i.e. 'always deficit' (Table 6.7). The great majority (51%) assess their status as being 'vulnerable non-poor' while over a quarter (26.5%) assess themselves as 'surplus'.

Table 6.7
Self-assessed poverty status

<i>Self-assessed status</i>	<i>%</i>
Always deficit	7.8
Occasional deficit	14.7
Break-even but vulnerable	51.0
Surplus	26.5
All	100

6.3 Licensing

The issue of driver licensing is an important element of the road safety agenda. The driver survey sought some information pertaining to the issue. The information, however, is limited only to the driver's viewpoint without the scope for any independent verification.

By the drivers' own testimony, nearly all drivers have a license (Table 6.8). The overwhelming majority of licenses – 75% - is for driving heavy vehicles.

Table 6.8
Type of license held by surveyed drivers

<i>Type of license</i>	<i>%</i>
For light vehicle (Private car/Jeep/Pickup)	6.9
For medium sized vehicle (Microbus/Minibus)	15.7
For heavy duty vehicles (Bus/Truck/Lorry etc.)	74.5
Does not have authorized license	2.9
<i>All</i>	<i>100</i>

80% of the surveyed drivers reported undergoing mandatory testing before obtaining their license. However, the remaining 20% admitted to obtaining their licenses without any test (Table 6.9). Interestingly, nearly half the licenses were obtained from BRTA district offices. A popular perception is that district offices suffer from lax standards. Be that as it may, a majority – 61% - also reported facing some form of harassment during the process of obtaining a license. Paying a bribe over and above due fees appears to be, by the drivers' testimony, an almost universal problem (92% reporting such a problem) while the other forms of harassment include time delay (53%) and the need to take the help of middlemen (39%). A small percentage (5%) faced a further problem in that the middlemen cheated them with fake licenses.

Table 6.9
Licensing: process details

<i>Process</i>	<i>Details</i>	<i>%</i>
Driving test	Underwent test	80.4
	License without any test	19.6
Location from where license obtained	Dhaka	51.0
	District office	49.0
Problems in obtaining license	Faced harassment	60.8
	No harassment	39.2
Nature of harassment*	Had to pay bribe	91.9
	Had to make repeated visits	53.2
	Had to take help of middlemen	38.7
	Middlemen gave fake license	4.8

**Multiple responses; do not add up to 100*

6.4 Trade union membership

The overwhelming majority of the surveyed drivers – 80% - have membership of one or more trade unions operating in the sector. Only 20% are outside any trade union membership.

6.5 Training

How does a driver become a driver? Table 6.10 looks at the process through which the driving skills were obtained. Only 2% of the surveyed drivers learned their driving skills through a process of formal training. The overwhelming majority – 81% - have acquired their driving skills through a process of informal learning. An additional 17% obtained their driving skills through a combination of both processes.

Table 6.10
Learning driving skills

<i>Mode of learning driving skills</i>	<i>%</i>		<i>Type of trainer</i>	<i>%</i>	<i>Average training hours</i>
Formal training	2.0		Friends/Relatives	3.2	614
Informal learning	81.4		Ustad	78.4	1541
Combination of both	16.7		Government Institutions	4.8	6
<i>All</i>	<i>100</i>		Private Institutions	9.6	93
			Others	4.0	141

Table 6.10 also provides further information of the type of ‘trainers’ who provide the training. The dominant category is the ‘ustad’ or mentor who is usually an older and experienced driver. Drivers who learned at the hand of the ‘ustad’ usually join as informal ‘helpers’. Average ‘learning’ period in such informal mentoring is about 1500 hours which can spread over 3 to 6 months. In contrast, formal training by private institutions is availed by around 10% of the surveyed drivers and the training hours in such a scheme are on average 93 hours.

Only 19.6% of the surveyed drivers incurred costs for learning their driving skills. Table 6.11 provides the information on the average expenses incurred by those who paid for their lessons. For the informal training-providers i.e. ustads and friends/relatives, the lesson fees averaged around Taka 4000. For the institutional training-providers both private and others, the average fee ranged between Taka 6 to 7 thousand.

Table 6.11
Costs of driving training

<i>Source/mode of training</i>	<i>Number of drivers out of the total of 102 surveyed who had to pay for training</i>	<i>Average expense on training (Taka)</i>
Friends/Relatives	2	4000
Ustads	3	3667
Private Institutions	12	6125
Others	3	7500

Even though much of the learning process on driving skills is informal, the perception of the surveyed drivers in majority cases is that the process is relatively effective in teaching driving skills and learning traffic signals and rules. 70% of the surveyed drivers expressed confidence that they had fully learned on issues of traffic signals and rules while the remaining 30% were moderately confident of their learning in this regard (Table 6.12). In terms of perceptions on the usefulness of the learning process on ability to drive, 84% were fully confident in their driving abilities with another 14% moderately confident. Only 2% felt that the training process had not been useful.

Table 6.12
Drivers' perception on efficacy of training

Perception on efficacy		%
Learning of traffic signals/rules	Learned fully well	69.6
	Learned moderately well	30.4
	All	100
Ability to drive	Can drive well	84.0
	Can drive moderately well	14.4
	Training was not useful	1.6
	All	100

6.6 Work-load

How much of a workload do drivers have to bear? Table 6.13 describes the findings in this regard. In terms of the weekly work-load, 41.2% of surveyed drivers work for up to 4 days a week while another 42.2% work 5-day weeks. A smaller percentage - 16.7% - bears a higher load of 6-7 days work-week. In terms of the daily work-load, 32.4% work up to 8 hours a day while nearly half (48.9%) work between 9 and 12 hours a day. A smaller but nevertheless significant percentage – 18.6% - bears an onerous daily work-load of 13-16 hours.

Table 6.13
Work-load of drivers

<i>Days worked in a week</i>	<i>%</i>		<i>Hours worked in a day</i>	<i>%</i>
Up to 4 day	41.2		Up to 8 hours a day	32.4
5 days	42.2		9-12 hours a day	48.9
6-7 days	16.7		13-16 hours a day	18.6
All	100		All	100

The general picture that emerges is that around a fifth of drivers are extremely over-worked with 6-7 days weekly work-load and 13-16 hours daily work-load. For the remaining, the work-load appear to leave reasonable room for breaks and rests in between assignments.

6.7 Mobile-phone use while driving

The use of mobile-phones while driving has been recognized as a safety hazard. The PPRC driver survey brought out the ground realities in this regard (Table 6.14). About two-fifths of the surveyed drivers use mobile while driving and they do so because they feel it does not interfere with their driving.

Table 6.14
Use of mobiles while driving

<i>Issue</i>	<i>Answer</i>	<i>%</i>
Use mobiles while driving	Yes	42.2
	No	57.8
	All	100
Feel mobile-use interferes with driving	Yes	62.8
	No	37.2
	All	100

The findings underscore not only a behavior problem i.e. mobile-use while driving, but also a perception problem in that the 40% of drivers who do use mobiles while driving do so on the perception that this is no safety hazard. Clearly, there is a major awareness-building task also implicit here.

6.8 Condition of vehicles

Even if the drivers were skilled and fully conscientious, safety hazards would remain if they vehicles they are driving are unsafe. Information was sought from the drivers on the condition of the vehicles they drove. A caveat here is of course the possibility that drivers may exaggerate the fitness of their vehicles. Bearing this in mind, table 6.15 describes the condition of the vehicles on the road as reported by the drivers.

Table 6.15
Condition of vehicles

<i>Issue</i>	<i>Answer</i>	<i>%</i>
Vehicle condition	Very good	47.1
	Moderately good	49.0
	Unfit	3.9
	All	100
Regular servicing	Regular	70.6
	irregular	29.4
	All	100

Around half the respondents (47%) assessed their vehicles to be in very good condition while the other half only assessed them as in moderately good condition. 4% were candid enough to say that their vehicles were unfit to ply on the roads. In terms of regular servicing, 71% reported that their vehicles were regularly serviced while 29% were only irregularly serviced.

The overall picture is thus a mixed one though not as scary as some perceptions would have it.

6.9 Accident experience of drivers

An important focus of the PPRC driver survey was to gain in-depth knowledge of the accident-related experience of the drivers. The driver survey revealed that of the 102 surveyed drivers, 50 drivers or 49% were involved in a total of 78 accidents (Table 6.16). However, taking account only of last 1 year, the percentage of drivers involved in accidents drops to 22%. Of those involved in accidents, 13% sustained personal injuries.

Drivers plying buses, particularly long-distance buses, are involved the most in accidents (48.7%). They are followed by mini-bus/truck drivers (23.1%) and heavy truck drivers (21.8%) respectively.

A majority of the accidents, however, are minor in nature. Table 6.16 shows that 58% of the incurred accidents were minor in nature with no fatalities and with minor damage to vehicle. However, what the information does not reveal is the frequency of non-fatal injuries. Fatalities are involved in 19.2% of the accidents. Significant damage to vehicle occurred in 21.8% of incidents.

Table 6.16
Accident experience of drivers

Accident-related issues	Answer	Value
Incidence of accidents	% of drivers involved in accidents	49%
	% involved in last 1 year	22%
	Total number of accidents surveyed drivers involved in	78
	% of drivers injured in accidents in last 5 years	13%
Types of vehicles involved in accidents	Bus	48.7%
	Mini-bus/truck	23.1%
	Truck	21.8%
	Micro-bus	3.8%
	Covered van	2.6%
	All	100%
Damage type	Fatalities and damage to vehicle	5.1%
	Fatalities with no damage to vehicle	14.1%
	No fatalities with moderate damage to vehicle	16.7%
	No fatalities with minor damage to vehicle	57.7%
	No damage to vehicle	6.4
	All types	100%

What happens to the drivers in the aftermath of accidents? Table 6.17 looks at some of the consequences for the drivers following accidents.

Table 6.17
Accident aftermath

Accident aftermath	Answer	Value
Penalties incurred (Multiple answers: percentages do not add up to 100)	Faced no penalty	42.3%
	Paid a fine	34.6%
	Faced court case	10.3%
	Temporarily released from duty	7.7%
	License impounded	1.3%
	Others	15.4%
Assistance received (multiple answers)	Assistance not required	47.4%
	Cost of litigation/fine	25.6%
	Re-instatement after temporary dismissal	10.3%
	Legal assistance	5.1%
	Partial family allowance during treatment	1.3%
	Others	14.1%
Treatment of injured drivers (13 drivers of the total of 102 were injured in accidents)	Private clinics	53.8%
	District hospital	23.1%
	Pharmacy	23.1%
Unions providing support	Road Transport Workers' Union	42.2%
	District Bus/Minibus Worker's Union	26.5%
	Bangladesh Inter District Truck/Covered Van Owners' Association	15.7%
	Bangladesh Inter District Truck Drivers' Union	10.8%
	District light vehicle Transport Workers' Union	2.4%

From the testimonies of the surveyed drivers, it would appear that as a group drivers are little affected by penalties flowing from accident occurrences. 42.3% of drivers involved in accidents, which can be both major and minor, faced no penalty. The principal penalty paid is the payment of a fine. 34.6% of drivers involved in accidents paid such a fine. The more striking finding is that though the proportion of accidents that caused fatalities were nearly a fifth of the total (Table 6.16), drivers faced court cases in only 10% of incidents. The impounding of licenses occurred in an even far smaller number of instances – 1.3%.

Given that a majority of the accidents are minor in nature, the governance failure implicit in the above statistics can be argued to be not so serious after all. However, this would be a wrong reading of the ground realities. A big unknown is the exact nature of the 'minor' accidents many of which may be causing non-fatal injuries that can be equally consequential in terms of economic and health burdens for the victims (see case studies in Chapter 4).

The other interesting finding from Table 6.17 is the support network provided by union membership. Types of assistance received include covering cost of litigation or fine payment, legal assistance and reinstatement after temporary dismissal. Interestingly, the small number of drivers who were injured in accidents sought medical treatment at private clinics more than at government hospitals.

Why do Road Accidents Happen?

7.1 Overview of causal factors

Though road accidents occur due to a multitude of factors and a holistic perspective on the issue is necessary, the causal factors are clearly identifiable and remedial actions on each are possible. Available literature generally agree that causal factors fall within four major clusters: i) driving habits ii) road-related factors iii) vehicle-related factors and iv) socio-economic environmental factors.

The 2013 WHO Global Report on Road Safety highlights five causal factors and remedial action areas: i) excessive speed ii) drunk driving iii) non-use of motorcycle helmets iv) non-use of seat belts v) non-use of child constraints. While all these are relevant, for countries like Bangladesh there are a number of additional factors at work that need to be taken into consideration. Table 11 summarizes these respective concerns.

Table 11
Global and Local Concerns on Road safety

<i>Causal factors prioritized globally for remedial action</i>	<i>Causal factors seen as contextually relevant for Bangladesh</i>
<ul style="list-style-type: none"> • Speeding • Drunk driving • Non-use of motorcycle helmets • Non-use of seat-belts • Non-use of child restraints 	<ul style="list-style-type: none"> • Reckless driving • Untrained drivers • Unfit vehicles • Simultaneous operation of motorized and non-motorized vehicles without separation and adequate rules • Vulnerable road-side activities • Faulty road design • Poor traffic enforcement • Lack of road safety awareness • Culture of impunity and poor legal redress

TaheraAnjuman et al¹⁹ identify ‘adverse roadway roadside environment, poor detailed design of junctions and road sections, excessive speeding, overloading, dangerous overtaking, reckless driving, carelessness of road users, failure to obey mandatory traffic regulations, variety of vehicle characteristics and defects in vehicles and conflicting use of roads’ as the major contributing factors to accidents in Bangladesh. They particularly highlight that “adverse roadway elements contributing to highway accidents were substandard road way alignment or geometry, lack of shoulders and shoulder defects, absent or inappropriate pedestrian facilities, narrow and defective lanes and bridges/bridge approaches, roadside hazards, undefined pavement centre and edge lines, poor sight distances and visibility, unmarked and inappropriate design of intersections, serious delineation deficiencies along the route, haphazard bus shelters/stops, and others. In many of these cases ‘running-off-road’ accidents involved vehicles leaving

¹⁹TaheraAnjuman et al, ibid

the carriageway and falling down the unprotected steep drops into ditches, accounting for nearly 60 percent of total, 'running-off-road' and 'out-of-control' accidents". The same experts also identify low level of awareness of the safety problems and regulations and traffic law enforcement and sanctions as important contributing factors to road accidents in Bangladesh.

Naila Sharmeen & Md. Rabiul Islam²⁰ also refer to many of the above causes of accidents. However, they also identify driver incompetency as an important cause for road accidents. They thus note 'Public transport drivers have no formal training, they are excessively overworked. Unqualified drivers get licenses through unfair means. ---- sometimes, helpers take over wheels with fake license and little or no training.' They also identify negligence of traffic police as a significant aggravating factor of accidents. Furthermore highlighting the importance of road safety audit to detect accident prone points on highways, where road accidents are frequent Sharmeen and Islam refer to the list of 200 accident prone points, termed as black spots, on ten major highways in Bangladesh prepared by ARI of Bangladesh University of Engineering Technology (BUET) and shared with the Roads and Highway Department. Significantly, they also 'note that road design and safety circle of RHD have neither the manpower nor logistics to conduct safety audit on highways and treat the faulty spots'. In the literature on road traffic accidents in Bangladesh defects in enforcement of strict vehicle road worthiness standards, corrupt practices prevalent in the issuance of driving license have also been identified as significant contributing factors enhancing the risk of road accidents.²¹

7.2 *Insights from FGDs*

To gain further depth to the causal analysis and remedial priorities, focus group discussions were held with key stakeholder groups. These included retired senior police personnel with extensive experience in traffic management, leadership of the Bangladesh Truck and Covered Van Owners' Association, drivers and local community. Insights from these FGDs are summarized in Table 12 while detailed report on on-site FGDs and situation reports are appended at Annex 4.

The juxtaposition of both management and user viewpoints confirms many of the causal factors identified earlier. However, several new areas of emphasis emerge that merit closer attention. A common theme emerging is the pressures under which drivers operate on Bangladesh roads. Mostly lacking formal training, drivers have to contend with high levels of financial and mental pressures arising from the need to maximize time-use for financial gain while also dealing with random police harassment. Lack of awareness of rules and casual disregard of the same exacerbate their negative image. A second theme is the absence of supplementary facilities on the roads – footpaths, hard shoulders, bus bays, helpful signals and markings, access roads etc. that compound the road chaos and increase the likelihood of accidents. It is worth remembering the bulk of the accidents occur at bus/truck stands and road intersections rather than on highway stretches. The third theme is the general lack of awareness about road safety across all categories of road-users. A fourth theme is the challenge for the road safety agenda arising from burgeoning road-side economic activities. A bureaucratic perspective that simply negates an urbanizing and economically growing rural society while developing the road safety agenda has and will

²⁰Naila Sharmeen & Md. Rabiul Islam- 'Road Accidents: Contemporary Scenario and Policy Issues in *Bangladesh*' *Journal of Bangladesh Institute of Planners* Vol. 4. December 2011, pp. 45-55

²¹ Syed Rakib Uddin and Dr. Md. Shamsul Hoque, 'Study of Heavy Vehicles' Driver Behavior in Road Accidents of Bangladesh', in the *Proceedings of the 26th Australasian Transport Research Forum*, Wellington New Zealand 1-3 October, 2003.

prove to be ineffectual. The focus rather has to be on governance and engineering solutions that builds road safety elements into a growing meso-economy.

Table 12
Causal factors highlighted by different stakeholders

Issue	Stakeholder viewpoint			
	Police personnel	Transport owners	Drivers	Local community
Causes of accidents	<ul style="list-style-type: none"> • Speeding • Deficiency of drivers • Violation of signals • Over-taking • Over-loading by trucks • Random line change • Mental annoyance of drivers for multiple reasons • Black spots (dangerous curves) • Over-speeding for time saving • Unfit vehicles • Bad roads • Slow and fast vehicles on same roads • Impunity for offences 	<ul style="list-style-type: none"> • No road dividers on most roads • Huge increase in number of vehicles on the road • Owners negligent on vehicle fitness • Poor knowledge of traffic rules by drivers • Poor knowledge of traffic rules by pedestrians • Unlicensed drivers • Lack of quality driving schools • Unsecured railway crossings • Harassment by police leading to mental pressure on drivers • Road-side markets • Motorized and non-motorized transports on same lanes • Poor stoppage facilities for bus drivers 	<ul style="list-style-type: none"> • Defective vehicles • Over-taking and speeding • Untrained drivers • Lack of sleep and tiredness • Radom presence of informal transports without indicator lights • Careless pedestrian use of roads • Absence of road markings and signals • Excessive road-side markets and shops • Police harassment and random stops • Drunk driving • Too many and unnecessary speed-breakers • Mental pressure on drivers due to financial obligations • 	<ul style="list-style-type: none"> • Too many vehicles vis-à-vis road space, inadequate bus stands • Increasing presence of unauthorized 3-wheelers • Absence of well-identified parking spots • Haphazard parking • Jaywalking by pedestrians • Police harassment and random stoppages for extortion • Too many unmarked turning points on highway • Lack of hard shoulders and sudden drop on the sides • Lack of foot path forces people to walk on streets • Road-side vegetation blocking views at curves • Uncovered sand trucks create problem for motor-cyclists who are blinded by flying sand

Laws and Institutions

8.1 Laws

The most important government legal instrument guiding all matters relating to road traffic and road safety is the Motor Vehicle Ordinance, 1983 as modified up to 1990. This is a comprehensive instrument covering a comprehensive range of issues such as matters relating to i) licensing of drivers of motor vehicles (Chapter II of the Ordinance) ii) licensing of conductors of stage carriage or contract carriage (Chapter III), iii) registration of motor vehicles including the issue of certificate of fitness (Chapter IV), iv) control of transport vehicles (Chapter V), v) construction, equipment and maintenance of motor vehicles (Chapter VI), vi) control traffic (Chapter VII), vii) motor vehicles temporarily leaving or visiting Bangladesh (Chapter VIII), viii) insurance of motor vehicles against third party risk (Chapter IX), ix) offenses, penalties and procedures (Chapter X) and finally x) miscellaneous matters (Chapter XI).

The other relevant legal and administrative instruments relevant for road traffic and road safety include a) The Bengal Motor Vehicles Rules, 1940 and Motor Vehicles Rules-1984, b) Metropolitan Acts and Ordinances such as : Dhaka Metropolitan Police Ordinance, 1976, Chittagong Metropolitan Police Ordinance, 1978, Khulna Metropolitan Police Ordinance, 1985 Rajshahi Metropolitan Police Act, 1992, 1992, Barisal Metropolitan Police Act, 2009, Sylhet Metropolitan Police Act, 2009, Police Act, 1861 and the High Way Police Rules, 2009. Some sections of Penal Code, 1860 are also relevant for penalties for RTA related offenses and fatalities. In Bangladesh the BRTA, Metropolitan Police, Highway Police and the District Police are the main agencies vested with the enforcement all the relevant laws, regulations and administrative orders on the above broad range of issues. The formation of the highway police in 2005 and a subsequent regulation in 2009 was a major institutional step by the government to improve road safety.

There has not been any major recent academic work on the adequacy of the Bangladesh traffic/road safety relevant legislation(s). Future work in this area may benefit from the following data and information, though incomplete, compiled in the relevant sections of the Global Status Reports on Road Safety, 2013 as below (Table 13)

Table 13
*An Assessment of Bangladesh road safety arrangement:
Global Status Report on Road safety, 2013*

<i>Institutional Framework</i>	
Lead agency	National Road Safety Council
Funded in National budget	No
National road safety strategy	Yes
Funding to implement strategy	Partially funded
Fatality reduction targets set	Yes (2008-2023)
Fatality reduction target	10% per year and 50% by 2023
<i>Safer Roads and Mobility</i>	
Formal audits required for new road construction	Yes

Regular inspections of existing road infrastructure	Yes
Policies to promote walking or cycling	No
Policies to encourage investment in public transport	Yes
Policies to separate road users to protect VRUs	Sub national
Safer Vehicles	
Total registered vehicles (2010)	1624862
Cars and 4-wheeled light vehicles	529215
Motorized 2-and 3-wheelers	975682
Heavy trucks	81561
Buses	38101
Other	303
Vehicle standards applied	
UN World forum on harmonization of vehicles standards	No
New car assessment programme	No
Vehicle regulations	
Front and rear seat-belts required in all new cars	Yes
Front and rear seat-belts required all imported cars	Yes
Safer Road Users	
Penalty/demerit point system in place	Yes
National speed limits	Yes
Local authorities can set lower limits	Yes
Maximum limit urban roads	50 km/h
Enforcement	012(3)45678910
National drink-driving law	Yes
BAC limit-general population	-
BAC limit-young or novice drivers	-
BAC limit-professional/commercial drivers	-
Random breath testing and/or police checkpoints	-
Enforcement	-
% road traffic deaths involving alcohol	-
National motorcycle helmet law	Yes
Applies to drivers and passengers	Yes
Helmet standard mandated	No
Enforcement	0123(4)5678910
Helmet wearing rate	-
National seat-belt law	Yes
Applies to front and rear seat occupants	No
Enforcement	012(3)45678910
Seat-belt wearing rate	-
National child restraint law	No
Enforcement	-
National law on mobile phones while driving	Yes
law prohibits hand-held mobile phone use	Yes
Law also applies to hands-free mobile phones	Yes

In addition to the gaps which become evident from the above, it is worth noting that in most developed countries there are provisions of entry of details on punishments/fines in the license booklets of offending drivers. The perpetrators of penal actions are made visible to and readily available as information to the enforcement authorities. Where drivers are frequent violators of traffic rules, their licenses without exception show the details of the fines and punishment meted out to them. Such drivers may be liable to the forfeiture of their licenses. In Bangladesh no such provisions exist which may need to be looked into. As particularly highlighted on the 2013 Global Status Reports on Road Safety, the Bangladesh rules and

regulation also do not contain relevant provisions on special measures to be taken to ensure the safety of children in private and public vehicles. From a review of relevant instruments and ground level reality on institutional arrangement it also appears that an inadequate, over-centralized, under-staffed and over-burdened institutional arrangement for monitoring and ensuring vehicle fitness also need corrective steps for much needed improvements.

An important new development worth noting is the move towards the drafting of a new law to supersede the MVO of 1983. A World Bank funded Clean Air and Sustainable Environment project (CASE) has been authorized by the government to draft such a law. Reportedly, the draft of such a law titled Road Transport and Traffic Act (RTTA) 2011 has been prepared and is awaiting due review and approval.²² An issue here is the absence of any meaningful consultative process by which the broader public can provide inputs into such a major legislative initiative and be equally informed of such developments. Reportedly accident investigation has been included as a requirement under RTTA 2011 and use of helmets and seat-belts made mandatory. However, it is not clear how much of policy consensus has been built to ensure quick passage of such a major legislative undertaking on road safety. What appears to be an immediately useful task is to initiate a comprehensive consultative on this both to inform and to stimulate a required debate that ensures that on passing the law does not merely sit on the shelf.

8.2 Institutions

There are three major regulatory institutions and two engineering institutions with responsibilities bearing on road safety. The regulatory institutions are the Bangladesh Road Transport Authority (BRTA) responsible for vehicle management and driver licensing, the Road Transport Committee (RTC) appointed by BRTA responsible for route franchising and the Police department - Metropolitan police, Highway police and District police – responsible for traffic management and enforcement.

The two engineering institutions are the Roads and Highways Department (RHD) responsible for the highways and the Local Government Engineering Department (LGED) responsible for the feeder roads.. In addition, the Accident Research Institute (ARI) at BUET is mandated to maintain an accident database. In 1995, the National Road Safety Council (NRSC) was established to provide a strategic vision on the theme of road safety.

BRTA

The Bangladesh Road Transport Authority (BRTA), established in 1983 under MVO1983 under the Ministry of Communication is the apex government organization in the road transport sector mandated to regulate registration of motor vehicles, issuance of fitness certificate of motor vehicles, issuance of route permit for transport vehicles, issuance of motor driving Licenses, issuance of motor driving Instructors' License, registration of motor driving training schools, inspection of motor vehicles involved in road accidents, inspection of government vehicles for repair etc. Besides, BRTA takes different measures in order to promote road safety and coordinates road safety prevention activities undertaken by different agencies/organizations. BRTA prepares the Annual Report of Road Traffic Accidents on the basis of reported data on road traffic accidents from Bangladesh Police.

²² M.S. Siddiqui, 2014, 'Waiting for a suitable traffic law', *The Financial Express*, April 30, 2014

As per revised organogram of BRTA, total number of circle is 62 (57 District Circle + 5 Metro Circle). At present 57 circles are working where 61 AD (Engg.) is posted as head of the office. Rest of the sanctioned circles are administered from nearby circles (57 circles). According to revised organogram the number of sanctioned office staff is 815 out of which 479 are working presently & Vacant Post 336. Circle offices of BRTA are headed by Assistant Director (Engg.) and the divisional offices by Deputy Director (Engg.).

Notwithstanding the formal jurisdiction of BRTA, the de facto rules of the game show that driver licensing, particularly of trucks and buses, is controlled by the trade union leaders of the sector and has been the case for long. The sectoral association leader is currently an influential cabinet member. Licensing examinations are typically waived for bus and truck drivers on the recommendation of the association leaders. For their part, participants in the FGD with bus/truck owners' association stressed that BRTA licensing procedure is too time-consuming and largely fails the large and growing demand for such licenses.

RTC

The Road Transport Committee (RTC), appointed by BRTA, has jurisdiction over route permits for buses. This committee typically suffers from a problem of political capture by ruling party members.²³ Over time, membership of this body has become a prime vehicle for rent-seeking.

Police: Metropolitan Police (MP), Highway Police and District Police Traffic wings

The police department recruits personnel like Constable, Sub-Inspectors/ Sergeant and Assistant Superintendent of police in accordance with the laid down principles. Among them, the sergeant is recruited mainly for the management of traffic anywhere in Bangladesh. They undergo the basic training for six months at Bangladesh Police Academy. After the successful completion of training, they are posted at traffic divisions of various police units. They may also be deployed to non-traffic units such as police outpost or police station for other police works. It is to be mentioned that Sub-inspector and sergeants recruited at the mid-level tier are of the same status but the basic difference is that the sergeant has not been entrusted with the legal power to investigate any criminal case even if it is a case of accident whereas the Sub-Inspector can investigate.

Constable who stands at the lowest rank of police hierarchy may be drafted for deployment in the traffic division if he has a special traffic training from the traffic training centre. However, he may be transferred out of traffic unit to other police units after a certain period. Similarly, armed Assistant Sub-Inspector may also be posted for a period of time in the traffic division and he may be posted out to other police units. Sergeants promoted to Inspectors may be retained in the traffic divisions or posted out to other police units. All other officers above the rank of Inspectors such as ASP, Additional SP, SP, Additional DIG and DIG may be assigned to supervise the traffic management but they are generalist. They do not have special training on traffic management.

Highway police is a separate police range headed by a DIG and is divided into 4 major regions namely Gazipur, Comilla, Bogra and Madaripur each headed by the Superintendent of police. The region is divided into zones headed by ASP, zones into police stations headed by Inspectors as Officer in charge

²³Abul Hossain, 2007, *Political economy report on urban bus operations*, Dhaka (mimeo)

and police stations into outpost headed by Sergeant. There are 9 zones, 28 Police Stations and 44 outposts. Sergeant is responsible to Officer in charge who is accountable to ASP. Likewise ASP is responsible to SP. SP is finally under the control of DIG Highway. DIG is directly accountable to IGP. The total sanctioned strength is 2138 which is quite insufficient in the consideration with the area coverage and volumes of traffic and other duties. ASP and above do not have any formal training on traffic management. Others receive training at traffic and driving school located at Mill barrack.

The traffic and driving school of Bangladesh police is located at Mill barrack, Dhaka. This is the sole traffic training institute of Bangladesh police. It is headed by the Commandant in the rank of Additional DIG and the Deputy Commandant in the rank of SP. There are other officers who act as trainers in the school. The school offers training on traffic management for 42 days. The trainees are sub-inspector, Sergeant, ASI and Constable. On the other hand, all metropolitan police arrange orientation courses on traffic management purely on ad hoc basis in their respective units.

NRSC& DRSCs

The National Road Safety Council (NRSC) was established in 1995 with a mandate to establish a strategic vision on road safety for the country. Starting with its first National Road Safety Strategic Action Plan covering the period 1997-1999, NRSC has produced a number of follow-up plans. Current strategic action plan is the sixth in the series and covers the period 2011-13 (this is appended as Annex6). NRSC operates through the Road Safety Cell (RSC) located within BRTA and the District Road Safety Committees (DRSC) at district and metropolitan levels. However, much of the above remain more on paper.

The 6th National Road Safety Action Plan identifies nine priority sectors for improvement. These are: i) planning, management and coordination ii) accident data system iii) road engineering iv) traffic legislation v) traffic enforcement vi) driver training and testing vii) vehicle safety viii) education and publicity and ix) medical services. For implementation purpose, seven leading agents have been nominated: a) Roads and Highways Department(RHD) b) Dhaka City Corporation(DCC) c) Bangladesh Police d) Road Safety Cell (RSC) e)Bangladesh Road Transport Authority (BRTA) f) the Ministry of Education and g)the Ministry of Health.

ARI

Initially established as the Accident Research Centre in 2002, the entity was upgraded to Accident research Institute (ARI) under the Ministry of Education at BUET. It is primarily mandated to maintain an accident data-base based on police data.

Road Safety Units at RHD and LGED

As the two major engineering institutions having a bearing on road safety issues, separate road safety units were established within these institutions in 1999 and 2005 respectively. However, these suffer from logistical and manpower inadequacies. In LGED, the unit is located within the Road Maintenance of Road Safety Unit (RMRSU). LGED has also established a Central Road Safety Committee to provide coordination and advisory services to RMRSU.

Improving Road Safety

Road safety is increasingly being recognized as a priority national agenda. While some of the problems are entrenched, the challenge lies in developing a realistic vision of progress on improving road safety. Setting realistic targets as for example in reducing road accidents fatalities by 50% in next ten years and incidence of accidents in general by 30% merit serious consideration. Key pillars for a viable road safety strategy have entered the discourse that include road safety management, safer roads, safer vehicles, safer road-users and post-crash response. Such pillars have been translated into an action agenda that includes accident black spot treatments, road safety audits and road inspections and assessments. There are many dimensions to the agenda of improving road safety some of which are reviewed below.

9.1 Recent progress and setbacks

Road safety surfaces as a periodic national concern particularly after gruesome accidents that claim many a lives as in the recent death of school children on a Jessore feeder road in south-western Bangladesh. While each such incident generates intense but short-lived introspection, it is a moot point to what extent they lead to a consolidation of a sustainable agenda of improving road safety. While the adoption of paper plans such as the 6th National Road Safety Strategic Plan (appended as Annex 5 to this report) indicate that government is engaged on the issue, it is important to subject such well-meaning plans to a reality check. The survey of drivers provides such a reality check in terms of a ground-level assessment by a key constituency on recent progress and setbacks on the road safety agenda (Table 9.1).

Table 9.1
*Perceptions of drivers on progress and setbacks on road safety agenda
(multiple responses)*

<i>Perceptions on progress</i>	<i>% of responses</i>		<i>Perceptions on setbacks</i>	<i>% of responses</i>
• New roads built and others repaired	84.4		• Increased extortion on highways by police and ruling party activists	61.8
• Road dividers & introduction of one-way system	34.4		• Increased traffic of unlicensed informal transports (nasimon/karimon/easy bikes)	43.1
• Building of fly-overs and over-bridges	32.3		• Proliferation of road-side markets	39.2
• Increase in number of police including highway police	20.8		• Improper and irregular road repair and maintenance	20.6
• Strategic placing of signboards carrying awareness-related messages	19.8		• Illegal truck stands and parking on highways	19.6
• Some road curves have been straightened	19.8		• Vehicle density relative to roads has increased	12.7
• Number of trained drivers and good vehicles is increasing	5.2		• Inactive and unaccountable highway police	10.8
• Awareness-building activities in terminals	4.2		• Proliferation of unfit vehicles on the roads	10.8
			• Needless speed-breakers and	8.8

			without clear marking/traffic signs covered by posters	
			• Lack of pedestrian awareness/foot over-bridges not used	7.8

As assessed by drivers, recent progress and setbacks on road safety fall into two neat boxes. The observed progress has mainly been in infrastructural areas i.e. new roads, road dividers, fly-overs and over-bridges, straightening of road curves, bill-boards on safety messages etc. Setbacks, on the other hand, have mainly been in governance and regulatory failures as well as road environmental factors i.e. increased extortion and insecurity on highways, proliferation of unlicensed and unfit vehicles, illegal truck/bus stands and proliferation of unplanned road-side economic activities. Regulatory failure also extends to poor planning and utility of speed-breakers on highways.

In many ways, the above observations gleaned from drivers speak of a broader conclusion. While there has been progress on many infrastructural gaps in the road safety agenda, severe gaps remain, indeed there have been further setbacks, in key governance, regulatory and awareness areas of the road safety agenda.

9.2 Gaps in law and policy

The earliest law on the road transport sector was the 1914 Motor Vehicles Act enacted by the British colonial rulers. This was replaced by a new law the Motor Vehicle Act of 1939 which underwent three name changes – East Pakistan Motor Vehicle Act of 1947, The Motor Vehicles Act of 1972 and finally the Motor Vehicles Ordinance (MVO) of 1983. The last remains the current law in force. While the names changed, the need for an updated law fulfilling the needs of present-day economy and society remains an unfinished task.

Key weaknesses of the MVO 1983 include²⁴: i) absence of any provision for regulating manufacturing and assembling of vehicles ii) lack of legal clarity on permissible transports i.e. absence of provision on slow-moving vehicles (SMV) and battery and gas-driven informal transports that have mushroomed in recent times iii) no provision for authorizing BRTA on license issuance and renewal iv) registration procedures and issuance of number plates not in conformity with the law v) no provision for phasing out of vehicles or fixing age limit of vehicles and vi) absence of provision to set standards on air pollution, carbon emission.

Policy-makers have recognized these weaknesses and the need for an updated law. This has eventually led to the drafting of a new law the Road Transport and Traffic Act (RTTA), 2011. Among other things, the new law covers all categories of road users including pedestrians, fixes the role local governments in the preparation and enforcement of some regulatory functions, provides legal backing for preparation and use of Highway Code and Traffic Sign Manual. A particular focus of the law is regulating pedestrian use of roads and highways though it is not clear whether there are any counter provisions regarding prevention of encroachment of footpaths and road-side land that make appropriate pedestrian behavior difficult if not impossible.

²⁴ M.S. Siddiqui, 2014, Waiting for a suitable traffic law?, in the *Financial Express*, Wednesday April 30, 2014, Dhaka

An interesting aspect of the law is that it has dropped the MVO 1983 provision for 'on spot fines'. Defined offences under the 1983 law are minor in nature and financial penalty given are also minor. Since nature of offences are contingent of changing technological and social circumstances, RTTA, 2011 has wisely opted to exclude this issue from the law itself and earmarked it to be included in the Rules to be formulated later under the law.

An important gap in MVO 1983 was the absence of any provision on manufacturing and commerce in motor vehicles. This has been rectified in the proposed RTTA, 2011 to ensure obligations of the manufacturers, assemblers and dealers as well as buyers' privileges. In other areas, accident investigation has been included as a legal requirement while the use of helmets and seat belts has been made mandatory and the use of mobile phones and ear plugs barred. Very importantly, the driver and in some cases the owner has been made liable for paying compensation in case of hit and run accidents.

An item completely missing in the earlier law, namely on parking, has been included in the proposed new law to ensure unobstructed traffic flow. Rights of emergency vehicles, pedestrian crossing, obligations of non-motorized transports have also been incorporated.

As the above analysis of the RTTA, 2011 shows, the proposed new law if enacted can go a long way to fill the glaring gaps in law and policy in the road transport sector. However, the disquieting fact is that preparation of a draft law has proved the easier task. The law is yet to be enacted and is currently in a legal stalemate due to objections of powerful vested groups. An additional disquieting factor has been the absence of an effective consultative process that could have mobilized critical stakeholder groups to bring pressure to bear on the authorities for early passage of the law. Such a consultative exercise merits being taken up as an urgent advocacy challenge.

Beyond the RTTA, 2011, there are some additional gaps in law and policy that also require attention. One of them is the differences in rules pertaining to highways under the purview of RHD (Roads and Highways Department) and the feeder roads in the countryside under the purview of LGED (Local Government Engineering Department). With the rapid economic transformation of rural Bangladesh and a burgeoning urbanization process, roads under LGED are also becoming as busy as national highways. Need for a uniformity of rules covering both road categories requires an urgent review.

The issue of parking has been touched in RTTA, 2011. This is as much a legal as a governance challenge and is crucial to the effective resolution of the road safety agenda. In any consultative exercise on the RTTA, 2011, this issue merits an in-depth discussion and more importantly a move towards an effective consensus. Speed-breakers too need be brought more systematically under policy discussion. A view highlighted in the site research carried out under this study was the poor utility of speed-breakers – either too many or non-optimally located or without clear markings to warn oncoming drivers.

Perhaps the most contentious issue is that pertaining to allocation of route permits. A political economy analysis carried out as part of this study identified this as a core mis-governance area. The mandated RTC (Road Transport Committee) nominally under the BRTA has invariably suffered from political capture by ruling party influential and other vested groups. Strengthening the law with the aim of addressing such political capture of route permit allocations has to be a priority.

9.3 *Institutional and governance issues*

Besides the law itself, the other policy instrument aimed at improving road safety is the National Road Safety Strategic Plan issued by the NRSC (National Road Safety Council) under the Ministry of Communication. The current one, 6th in the series, covers the period 2011-13. While it is a moot point to what extent such plans influence ground realities, they are nevertheless important in providing an insight into how priorities are being viewed in official circles. The 6th National Road Safety Strategic Plan projects eight priorities: i) planning, management and coordination of road safety ii) road traffic accident data system iii) road safety engineering iv) road and traffic legislation v) traffic enforcement vi) driver training and testing vii) vehicle safety viii) road safety education and publicity and ix) medical services for road traffic accident victims. The document spells out priorities and action plans on each of the above.

An important issue often lost out in the debate is the funding of road safety initiatives. The 6th Strategic Plan included mobilization of donor assistance for road safety funding as an action priority. A corollary issue here is the absence of an Economic Code for road safety in the current budgetary framework. Road safety projects are usually subsumed under civil works but in the process lose the required sense of priority. Provision of a sub-code will allow road safety to be adopted as independent projects.

The 2011-13 6th Strategic Plan on road safety makes it amply clear that on paper required institutional oversight and monitoring bodies are already in existence such as road safety committees at national, district and upazila levels i.e. the NRSC, DRSCs and URSCs. The key issue here is the pro-activeness of such bodies. Ground realities suggest much progress is required in this matter.

An encouraging development has been the directive to include road safety components in all important road projects of RHD and LGED. As explained earlier, this positive development needs to be supplemented with a small change in budgetary procedures whereby an independent economic code for road safety can allow projects to be undertaken separately rather than as a component of civil works. It is encouraging that the 6th Road Safety Strategic Plan has identified setting up a record system on completed road safety schemes as an action priority.

A thrust area for remedial measures has been on the improvement of accident spots or more commonly known as black spots. Such improvement appears to be an ongoing process though there can be more strategic thrust to it. The 6th Plan also specifies the production of a Road Safety Engineering Manual for advising on identification of accident sites, their analysis and improvement.

Vulnerable road users have been specifically mentioned in the 6th Strategic Plan. However, a review of the listed action priorities again brings to the fore the uncomfortable conclusion that much of such planning by the government remains a paper exercise. For example, pedestrian facilities such as foot-paths are noted as a priority and progress described as 'ongoing'. In reality, the virtual disappearance of foot-paths due to unrelenting encroachment under political patronage is a more accurate description of the ground reality. The issue, therefore, is not merely of institutions but more importantly of governance. Among the many FGDs carried out under this Study, one common point made by all the stakeholders was that many good laws and plans eventually fail at the stage of enforcement. Such failures occur not

primarily because of a lack of capacity but due to a combination of a lack of will, lack of coordination and the entrenched power of vested interests who benefit from the prevailing situation.

9.4 Engineering issues

Alongside institutional and governance issues, engineering solutions to road safety improvement are an integral part of the agenda. The priority list of engineering issues pertaining to road safety include:

- *Geometric design* standard: Significant improvement works have taken place on national and regional highways, zilla and local roads all over the country. These include construction of new and strategic roads, re-alignment of existing roads, widening of roads, surface treatments, shoulder improvement, removal of vision obstruction. From an engineering point of view, safe road design is important. RHD geometric design manual addresses the safety issues like the AASHTO Green Book which is a widely accepted geometric design standard.
- *Horizontal and vertical curves*: Curves in roads and highways are essential elements sometimes provided intentionally to enable transition and super-elevation. It is imperative to follow design standards of RHD Manual or AASTO Green Book in this regard.
- *Width of the road*: road width is normally fixed by traffic volume as well as vehicle sizes. Road width of 2-lane National Highway is 7.3 m. However, if the traffic volume exceeds 14000 per day, the highway should be a 4-lane highway. Most of the major highways in Bangladesh such as, Dhaka–Chittagong (N1), Dhaka-Tangail (N2), Dhaka-Mymensingh (N3) should have been converted to a 4-lane highway long before on this consideration.
- *Intersection design*: Intersections should be avoided in highways. Flyovers, Interchanges, elevated and depressed portions of highways are provided to avoid intersections. In Bangladesh, intersections in highways so far could not be avoided due to various reasons such as, road side activities all along the highways, poor access control, poor or no prediction of future road and land use, inadequate survey and research, incompleteness of projects, inadequate funds as well as budgeting and presentation by inexperienced as well as non-technical officers, above all bureaucracy and lack of proper education and training provided to the officers and engineers involved in implementation process.
- *Grade separation* for interchanges and for different modes of traffic: Highways should be free from pedestrians, non-motorised or slow moving vehicles. However, in Bangladesh because of the socioeconomic condition it is not possible to prohibit these kinds of vehicles to enter the highway. Therefore, separate road will have to be provided for these vehicles through graded separation.
- Using *dividers, islands, flares, tunnels* for safe management of traffic: Dividers can only be provided in highways with at least 4-lanes. Islands guide the traffics to desired directions. Flares are very useful in intersections for uninterrupted flow of through traffics. Construction of tunnels is expensive and should only be provided where other grade separations are difficult to construct according to geometric design standards.

- Designing of roads considering *sight distances*: Sight distance means the distance to allow the drivers to control the vehicles, such as, stopping sight distance and overtaking sight distance. These are considered during positioning the road furniture such as, road signs, islands or dividers as well as designing the curvature of the roads.
- Fixing *speed limits* depending on the designs: Speed limits are provided in roads depending on the road condition like, condition of road surface, traffic congestion, use of traffic lanes, horizontal and vertical curves in roads. In Bangladesh, there are speed limits in some of the roads; however, so far these limits have been ignored both by the drivers as well as by law enforcing agencies. Separating different modes of traffic and lane management is required for effective use of speed limits that reduces accidents.
- *Quality of Road Structures*: Potholes, rutting, cracking and unravelling of road surface. Potholes means depression in roads, rutting is deformation along the wheel path of the vehicles, cracking and ravelling are visible failures in roads in relatively larger areas. These conditions in roads may result in losing of control of the vehicle by the drivers resulting in accidents.
- *Skid resistance* of road surface: Sometimes a little roughness in roads proves to be helpful in resisting the skid of vehicle wheels particularly in narrow roads.
- *Hard shoulder* of roads: In Bangladesh, most of the highways do not have hard shoulders because of limited space and fund constraints. Hard shoulders are normally constructed to provide extra space for the vehicles to avoid collisions as well as provide space for broken down vehicles. Hard shoulders are not in any case provided for slow moving vehicles.
- *Signs, Road marking and Signals*: Providing standard sign boards (Digital Boards) are for information of road ahead, such as, intersections, curves, exits, service stations, direction and distance of important locations, weather condition, road surface conditions, maintenance works etc. Road markings, studs, cats eyes are very important for managing the discipline of traffic system, lane discipline, improved vision for drivers at night time etc. Red, amber and green signals at the intersections or traffic police are provided to control the movement of traffic. Design of timing of the signals and enforcing law is very important for road safety.
- *Access Control* and Road Side Activity: Access control is very important particularly for highways. Access of traffic to highways, if needed, should be provided with proper structure following geometric standards
- *Road-side activities*: As minimum as possible road side activities should be allowed in the highways, however, if essential, proper access controls have to be provided. In Bangladesh, generally, there are many market places all along the highways. These markets or bazaars are often remains crowded. Pedestrians, passengers of slow moving vehicles, vendors, buyers are always remains vulnerable to become victims i.e. likely to be run over by fast moving vehicles.
- *Facilities for pedestrians*: Pedestrians are the most vulnerable group among the road users and as such proper road crossing facilities and barriers have to be provided for pedestrians. However, building awareness amongst pedestrians is also important so that the built facilities are appropriately

used. The structures too should be designed in a way that ensures the use of the structures by the pedestrians.

- *Facilities for disabled people.*

One issue which has already got attention from the engineers is that of 'black spots'. RHD Road Safety Division has identified 209 such black spots of which remedial measures have been completed for only 17 such spots. The vulnerable T-junction near Jatiyo Smirity Shoudho has been rectified by channelization of directions and so far no recorded accident occurs after that. The curvature on the Manikganj highway at which renowned film-maker Tareque Masud and journalist MishukMunir met tragic deaths has since been rectified. Planning Commission is currently reviewing a project proposal for rectification of 144 black spots.

Typical engineering safety measures include incorporation and treatments of i) road shoulders ii) pedestrian facilities (segregated footways, crossings) iii) junction improvements iv) treatment of hazards v) speed control devices vi) median barriers vii) access control viii) channelization ix) traffic islands x) skid resistance treatment xi) improved delineation devices xii) safety zones etc. including provision of divided roads. However, many of the national and regional highways in Bangladesh lack these safety measures. Some of the good examples are shown below.



1,2) Solid carriage way line and dotted centre line (overtaking allowed) / 3) Solid centre line on curve for caution about overtaking / 4) Solid double line for no overtaking and channelization in front / 5) Dotted centre line with no shoulder 6) sign showing a curve.



Highway with median Separate lane for non-motorized vehicles Highway under a bridge of good clearance and clearly marked carriage way with guard rails

An important new engineering concept for road safety is *road safety audit*. Safety audits are carried out at discrete stages of the road development projects, namely, at feasibility stage, preliminary design stage, detailed design and pre-opening stage. Safety audit checklists are a key instruments and typically includes i) design consideration/approach ii) alignment: curvature, grades, visibility iii) intersections: layout, detailed geometric design, visibility, traffic controls iv) pedestrian facilities: provision for crossings, footpaths, refuge, segregation v) cycle/non-motorized vehicle facilities: segregated/shared bicycle paths vi) motorcycle facilities: motorcycle lane, lane segregation vii) traffic signs and markings: sign location, visibility, delineation viii) road furniture: lighting, physical obstacles, bridge/culverts and ix) traffic management and operation: network management, parking, safety zone.

9.5 Awareness, advocacy and community participation

Awareness-building is an integral component of the road safety agenda and has indeed been recognized as such in official documents such as the 6th National Road Safety Strategic Plan. While there have been a number of project-based sporadic awareness campaigns, the challenge lies in building sustainable initiatives and institutions that can serve to mainstream the road safety agenda within the policy debates and simultaneously transform various groups of road-users into full partners in the road safety agenda.

Currently awareness programs targeted to drivers, school children, local community are undertaken by the two road sectors government departments RHD and LGED as well as by the civic group *NirapadSarak Chai*. Among others, BRAC has also been active in the road safety awareness agenda and undertook a number of assessments of the LGED and RHD awareness projects.²⁵

NirapadSarak Chai (movement for safe roads) comes closest to a sustained civic campaign on the road safety agenda. Born of a personal tragedy (see case study in Chapter 4) and led by a public personality in the form of a film star, NSC started as an individual effort and slowly graduated to a civic platform with

²⁵BRAC, 2004, "Launch of International Guidance on Community Road Safety Education," Seminar Report, Organized by BRTA, BRAC and Transport Research Laboratory (TRL), October, 2004. BRAC, 2004, "Promoting Road Safety Through Community Education Programmes : Study Report Betia (Bangladesh)," BRAC, April, 2004. BRAC, 2005, Road Safety Public Awareness Campaign on Dhaka-Sylhet Highway: A GO-NGO Collaboration," Workshop Report, Organized by Roads and Highways Department and BRAC, June 2005. GOB, 2005, "Road Safety Public Awareness Campaign On Dhaka-Sylhet Highway," Government of the People's Republic of Bangladesh, Ministry of Communications, RRMP-III, Roads and Highways Department, Final Report, Volume-I, June 2005. BRAC, 2007, "Road Safety Awareness Campaign for School Students under LGED's RIIP-RDP-25 in Barisal and Khulna Division," Final Report, BRAC, April 2007. BRAC, 2007, "Road Safety Awareness Campaign in Bangladesh: a component of RHD's Major Roads Project in Patuakhali and Barguna districts," Project Completion Report, BRAC, Volume – I, August 2007. BRAC, 2013, Idea-generation Workshop on Road Safety Research," organized by Advocacy for Social Change BRAC, April, 2013

support of social, corporate and government organizations. The platform recently launched a web portal dedicated to the safe road agenda. The platform has built local-level committees at district and upazila level. The platform organizes meetings, publicity events, marches and human chains to build greater awareness and pressure for the safe road agenda. IliasKanchon, the face of NSC, also initiated a training program for drivers but it has not graduated to a regular activity.

BRAC has also built a track record of engagement on the safe road agenda. BRAC is a member of the Bangladesh Road Safety Coalition Project which also includes the Centre for Injury Prevention Research Bangladesh (CIPRB), Chevron and the Accident Research Institute (ARI). BRAC has also undertaken many assessments and awareness programs. It has also established a driving school albeit with a small intake but with a larger objective of developing suitable driving manual. This goal was initially pursued by the Accident Research Institute (ARI) at BUET but has since been taken up by BRAC.

An important insight emerging from the review of road safety advocacy efforts is that these have focused more on general awareness-building rather than on a sharply targeted policy agenda. It is indeed a great surprise that a potentially momentous legislative initiative such as the RTTA, 2011 has not occasioned a vigorous public debate on its details.

Keeping the above in view, four priority advocacy areas are suggested (Box 2).

Box 2
Advocacy Priorities

<ul style="list-style-type: none"> • <i>Social communication</i> targeted to drivers and vulnerable road users.
<ul style="list-style-type: none"> • <i>Awareness program</i> targeted to school children.
<ul style="list-style-type: none"> • <i>Focused workshops</i> with administrative departments – RHD, LGED, Ministry of Communication, Ministry of Health and local government bodies aimed at making such bodies more pro-active in realization of their road safety plans.
<ul style="list-style-type: none"> • <i>Policy advocacy</i> on updated road transport and traffic legislation.

Beyond advocacy efforts per se, the issue of community participation in specific road safety solutions also merits attention. There are no systematic opportunities for such participation. However, some examples were noted during the site research carried out as part of this Study on the Tangail highway at Chandra Mor. The spot in question housed a number of garment factories whose workers numbering over ten thousand faced considerable risks of accidents in crossing the highway to reach their factories. Since late 2013, the factory owners undertook an initiative to deploy their security guards as community police for safe passage of their workers during three peak hours – morning (7.30-8.30 a.m.), lunch period and

evening when the work hour end. The designated community police use whistles, red flags and red ropes to facilitate safe passage. Earlier, there were fatalities nearly every month in this spot. But such incidents declined though not totally after the community police initiative.

9.5 Political economy factors

While there is considerable momentum on the road safety agenda in Bangladesh in terms of new ideas, new plans and a burgeoning discourse, results on the ground remain limited due to entrenched political economy factors. Such factors rarely find their way into 'official' or even academic analysis. However, the mass media is quite vocal on these issues and often bring out the real barriers to the road safety agenda. A report in the Daily Janakantha of 23 February, 2014 identifies elected representatives, both members of parliament and city councillors, as the main impediment to the implementation of road safety plans developed at the ministry level. The sincerity of police who are tasked with enforcement is also questioned. Two particular areas where remedial action is making little headway are i) occupied footpaths and road-side land and illegally-established bus and truck stands and ii) removal of unfit vehicles from the roads. Eviction drives against illegal structures alongside highways frequently get stalled due to the opposition of local MPS and local government leader many of whom are intimately connected to the transport trade.

Another report in the leading Bangla daily ProthomAlo on 19 February, 2014 highlight the virtual dominance of the transport trade by ruling party MPs and political leaders. These powerful lobbies have ensured that the Strategic Transport Plan (STP) adopted in 2008 has simply remained stalled. Key Ministers who are simultaneously leaders of transport worker unions as well a host of powerful ruling party leaders also own major transport companies. As a result, route franchising remains a highly mis-governed arena with rampant rent-seeking and scant regard for bringing discipline into the sector. An equally pernicious problem is the rampant occupation of foot-paths facilitated by a police-political leader nexus that make a mockery of the road safety agenda.

Many other media reports echo these points. The overall conclusion arising out of these media exposure is that government's effective attention is to protect the interests of transport owners and workers and very little with the interests of passengers

Recommendations

10.1 Findings that matter for the road safety agenda

The preceding chapter has reviewed at length the steps required to take forward the road safety agenda in Bangladesh. The purpose of this chapter is to crystallize that discussion into a focused set of recommendations. Before that, however, it is worth reiterating six key findings that inform the road safety debate and the suggested recommendations.

Key findings 1 Accident spots

Road accidents are occurring not across all the length of the highways and streets but in a finite number of 'black spots' that see repetitive accidents. An analysis carried out for this study shows that accident-prone length of the highways total to around 57 km. RHD road safety division has identified a list of 209 such 'black spots' though it should be added that regular updating of such a list is necessary as more and more of former rural roads are carrying sharply increased road traffic.

Key findings 2 Intersections/bus stands and dangerous curves dominate black spots

High frequency of accidents occur not on isolated stretches of highways but in poorly planned and poorly regulated crowded intersections and bus stands. Curves with poor visibility also claim a high share of accidents.

Key findings 3 Pedestrians and vulnerable road-users are the major accident victims

Vulnerable road-users constitute 76% of accident victims. The single most at-risk group is pedestrians (41%) followed by passengers of light vehicles (19%) and motor-cyclists/3 wheelers (16%). Not surprisingly accident types confirm these findings: 42% of accidents are 'hit-and-run', 19% are head-on collisions and 13% due to over-turned vehicles.

Key findings 4 Multiple causes of accidents necessitate a holistic safety agenda

Improving road safety and reducing accidents require a multi-pronged approach because there are nine major causal factors at work. These include reckless driving, untrained drivers, unfit vehicles, simultaneous operation of motorized and non-motorized vehicles without separation and adequate rules, vulnerable road-side activities, faulty road design, poor traffic enforcement, lack of road safety awareness and a culture of impunity with poor legal redress.

Key findings 5 There are significant gaps in law and policy

Road transport sector has grown phenomenally in Bangladesh but without the benefit of updated laws and regulations. The principal legal instrument – Motor Vehicle Ordinance 1983 – is essentially a colonial hangover and is grossly out-of-date. However, move towards a new law is taking place without a comprehensive consultative process.

Key findings 6 Political economy factors are a major impediment to safe road agenda

While there are many initiatives to make roads safer, many of these are routinely frustrated due to entrenched power nexus that prevent action against unfit vehicles, irrational route permits, encroachment on and occupation of road-side public land and appropriate penalties for accident perpetrators. Ownership of many transport companies as well as control of transport sector worker unions is dominated by influential political leaders. The problem is compounded by either the complicity or inaction by the police.

10.2 Eight priority recommendations

While a holistic road safety agenda necessarily has to include a multiplicity of recommendations (see matrix in next section), it is useful to highlight the key priorities for the attention of policy-makers and advocates. Eight priorities are recommended as in Box 3 below.

Box 3
8 Priority Recommendations.

<ul style="list-style-type: none">• National dialogue on RTTA 2011 for early passage of an appropriately updated road traffic law
<ul style="list-style-type: none">• Regular updating of the list of accident black spots and priority action plan on black spot improvement
<ul style="list-style-type: none">• Improved road engineering solutions with priority attention to geometric standard, intersection design, grade separation, access control on highways, pedestrian facilities, regular maintenance and adoption of road safety audit approach
<ul style="list-style-type: none">• Introduction of an independent economic code for road safety projects in the budgetary process and mobilization of funds including donor assistance for such projects
<ul style="list-style-type: none">• Promotion of quality driving training schools
<ul style="list-style-type: none">• Scaling up a national road safety awareness program in partnership with civic platforms such as NirapadSarak Chai and Bangladesh Road Safety Coalition Project targeted to drivers and vulnerable road-users
<ul style="list-style-type: none">• Establishment of a National Traffic Training Academy along with a comprehensive review of current approach to traffic management by police
<ul style="list-style-type: none">• Promotion of effective community policing solutions to irrational traffic congestion and safe use of roads

10.3 Recommendations Matrix

Issues	Sub-issues	Recommendations
A. Governance in road safety	1. Laws and policy	<ul style="list-style-type: none"> Undertake immediate and effective comprehensive consultation on proposed Draft Road Transport and Traffic Act 2011 (RTTA) meant to replace currently operational traffic law MVO1983 Updated and effective traffic legislation to replace MV Act of 1983 (proposed Draft RTTA to be finalized after due consideration by all relevant stakeholders)
	2. Institutions	<ul style="list-style-type: none"> Review progress on implementation of National Road Safety Strategic Action Plan 2011-2013. Coordination Role of the National Road Safety Council (NRSC), DRSC and URSC should be fully activated. Capacity-building of the road safety divisions at RHD and LGED.
	3. Traffic management and enforcement	<ul style="list-style-type: none"> Comprehensive review of current system of traffic management by police with a view to professionalization and dedicated traffic management. Establishment of National Traffic Training Academy. Strengthen highway police capacity and performance. Promote effective community policing pilots on traffic congestion in major cities of the country and at accident black spots on the highways.
	4. Budgeting	<ul style="list-style-type: none"> In order to ensure proper and sustained funding of the road safety related concerns being dealt with by specific ministries, government institutions, create separate economic code and budget head for predictable allocation of resources for road safety related concerns and activities. Mobilize funds including donor assistance.
B. Engineering aspects of road safety	1. Road design	<ul style="list-style-type: none"> Adopt geometric design standard (AASHTO Green Book) in all highway projects. A national workshop of all stakeholders including especially engineers may be convened to consider road designing priorities in Bangladesh to ensure maximum road safety standards and prepare a set of guidelines to be taken into account in designing and maintaining the roads with safety concerns adequately being addressed
	2. Quality of road structures	<ul style="list-style-type: none"> All major highways need to be improved to 4-lane with dividers, this will reduce head on collisions. Regular maintenance should be prioritized to ensure that road surfaces are free from potholes, undulations, rutting, cracking. Bridges in highways should be well maintained and safe. Grade separation should be implemented in major intersection with proper engineering design Treatment of shoulders Grade separation for non-motorized vehicles and designated truck/bus lanes. Adopt Road Safety Audit approach.
	3. Signs, road-markings and signals	<ul style="list-style-type: none"> Road signs are very important to guide the driver in his desired directions, alert the driver for upcoming road situations, to show the directions, speed limits etc. Reflecting signs are very effective to guide the driver at night. Road signals are particularly important in intersections. Automated signals at any intersection and most importantly at level crossings are very important. Road markings, cat eye are also essential to keep the driver in lane, show the direction of road, particularly at night.
	4. Access control and road-side activity	<ul style="list-style-type: none"> A certain level of realistic access control of highways has to be implemented. Road side barriers should be provided wherever possible, large bus bays and their proper use are also important. Traffic management in bazaar sections, bus stands, residential / industrial / commercial areas, schools and other educational organisations needs to be of good standards, such as, prominent road markings, signs, signals have to be provided and enforcement of law should be strictly followed. Major road side activities in market areas of highways should be reduced or enforcing legislation that market and other major infrastructures cannot face the highway or direct access from the highway should be restricted. Access or exit from a minor highway to a major highway should be provided with proper engineering applications such as, merging or diverging. If a

		<p>crossing needs to be provided without grade separation, a roundabout, rumble strips, give way signs, road median, channelization etc. required to be provided for safe passage of vehicles.</p> <ul style="list-style-type: none"> • Pedestrian access to highways is difficult to restrict in Bangladesh, however, there should be some control such as, in important locations foot over bridges or tunnels or zebra crossings with traffic calming arrangements should be provided.
	5. Pedestrian facilities	<ul style="list-style-type: none"> • Incorporate pedestrian facilities including for disabled people in all road projects. • Ensure optimal location of foot-overbridges and their adequate numbers. • Avoid wasteful structures that are cost-heavy but pedestrian-unfriendly. • Ensure political drive against encroachment of foot-paths and similar pedestrian facilities • Undertake pilot programs on dedicated cyclist paths on city streets.
	6. Accident spots	<ul style="list-style-type: none"> • Updating of current list of accident black spots. • Road safety audits at regular intervals to ensure routine updating list of black spots. • Fast-tracking new project proposal by RHD to undertake improvement of identified black spots. • Promoting awareness-building and community policing programs at identified black spots.
C.Vehicle management	1. Vehicle licensing	<ul style="list-style-type: none"> • Undertake and implement a comprehensive plan for capacity upgradation and professionalization of BRTA to provide quicker service, avoid corruption and ensure that unfit vehicles have no opportunity for registration. • Ensure inclusion of vehicle licensing and standards issues in the proposed new road transport and traffic law. • Vehicle testing program may be outsourced to accredited and technically competent technicians or companies.
	2. Vehicle safety standards	<ul style="list-style-type: none"> • Weighing stations should be set up on all national highways to control overloading of trucks. Trucks carrying more weight than permitted, damage roads, destroy bridges and cause road accidents. • Locally made bus bodies are not built to specification, resulting in over-turning at high speed. This has to be re-examined thoroughly for the sake of safety.
D. Road-users	1. Drivers	<ul style="list-style-type: none"> • Current loop-holes that allow obtaining licenses without tests or fake licenses through bribery have to be addressed seriously as part of a major overhaul of BRTA performance. • Promote establishment of quality driving schools with a strict process of accreditation with BRTA. • Undertake regular awareness- building programs targeted to drivers at major bus/truck terminals with a focus on safety issues.
	2. Pedestrians	<ul style="list-style-type: none"> • Undertake on a regular basis awareness-building programs implemented jointly by government and civic platforms targeted to pedestrians and local community. • Develop and deliver a focused social communication package on road safety issues including use of zebra crossing, foot-overbridges, standing at safe distances, meaning of signs and symbols and the importance of following them.
E.Accident and post-accident issues	1. Accident investigation	<ul style="list-style-type: none"> • Make accident investigation legally mandatory. • Undertake a focused training program for selected police personnel to build capacity for competent accident investigation. • Change current practice of focusing more on the vehicle involved in accident and not on the place of occurrence.
	2. Medical facilities	<ul style="list-style-type: none"> • Strengthen emergency care in all major hospitals • Introduce an universal access number like 911 in USA to call for emergency assistance • Increase trauma treatment facilities and ensure adequate trained manpower for such facilities on all major highways and major urban centres. • Introduce a basic training program on CPR targeted to the local community in selected pilot areas and gradually scale up across the country. • Introduce an awareness program on on-site preparation of ID tags of accident victims for optimal utilization of the post-accident 'golden hour' and minimize delays in tertiary treatment.
	3. Victim support	<ul style="list-style-type: none"> • Strengthen legal provisions for compensation claims by accident victims. • Review the accident insurance sector and ensure a more victim-friendly

		operation of the sector <ul style="list-style-type: none"> • Review the options for an effective support program for required post-traumatic treatment. • Include post-accident treatment as an issue in the emerging UHC agenda.
	4. Data-base	<ul style="list-style-type: none"> • Update the accident data-base utilizing both MAAP data and other credible sources (refer to Indonesian example for effective use of multiple sources) • Improve the current accident report form for better information and greater usability. • Develop a realistic strategy to overcome the problem of under-reporting.
		<ul style="list-style-type: none"> • Undertake regular awareness- building programs targeted to drivers at major bus/truck terminals with a focus on safety issues. • Undertake on a regular basis awareness-building programs implemented jointly by government and civic platforms targeted to pedestrians and local community. •
F..Advocacy Challenges	1. Awareness-building	<ul style="list-style-type: none"> • Undertake regular awareness- building programs targeted to drivers at major bus/truck terminals with a focus on safety issues. • Undertake on a regular basis awareness-building programs implemented jointly by government and civic platforms targeted to pedestrians and local community • Develop a road safety module as part of civic education for school children.
	2. Policy advocacy	<ul style="list-style-type: none"> • Undertake a national dialogue on the proposed RTTA, 2011. • Review workshops on progress of various action plans of the National Road Safety Strategic Plan.

Annex Tables

Table A1
Year wise number of road accidents in Bangladesh on which police cases were lodged

Years	Total number of accidents on which cases were lodged	No. of fatal cases	No. of severe cases	No. of not severe cases	No. of deaths in fatal cases of accidents
2000	4357	2866	1112	379	3430
2001	4091	2811	1009	271	3109
2002	4918	3166	1310	442	3398
2003	4749	3028	1199	522	3289
2004	3917	2808	847	262	2968
2005	3955	2929	820	206	3187
2006	3794	2854	709	231	3193
2007	4869	3448	1132	289	3749
2008	4427	3186	1002	239	3765
2009	3381	2482	706	193	2958
2010	2827	2203	512	112	2646
2011	2667	2084	511	72	2546
2012	2637	2062	473	101	2538

Source: Police First Information Reports (FIRs)

Table A2
No. of vehicle in Bangladesh by types involved in accidents according to recorded police data

Year	Total	Bus	Trucks	Car/Jeep	Baby Taxis	Motor cycles
2000	4235	1903	1446	388	363	135
2001	3679	1556	1463	294	234	132
2002	4331	1989	1464	441	280	157
2003	4249	1992	1465	397	250	145
2004	3913	1777	1224	340	260	312
2005	3922	1924	1226	352	222	198
2006	3694	1712	1227	298	258	199
2007	4686	2233	1368	434	367	284
2008	4533	2073	1292	452	367	349
2009	3419	1455	1011	389	267	297
2010	2881	1185	825	273	264	334
2011	2686	1063	801	274	269	279
2012	2694	1024	819	283	243	325

Annex 2

List of Highway Accident Spots

Source

Accident Research Institute (ARI), BUET

N-1 DHAKA-CHITTAGONG HIGHWAY

SL. NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Madhya Bauchia Bus Stand	36.0	36.6	0.7	26	18	44	43	51	94
2	Narayanganj Road Intersection	11.7	12.2	0.6	45	10	55	49	25	74
3	MeghnaGhat Intersection	27.3	27.6	0.4	24	6	30	40	23	63
4	Feni-Laxmipur Intersection	157.0	157.5	0.6	28	11	39	40	16	56
5	Fazilpur Madrasa/ Bus Stand	170.1	170.4	0.4	7	8	15	9	40	49
6	Before Feni Level Crossing	147.8	148.0	0.3	10	7	17	18	28	46
7	Muhuriganj Bus Stand/ Intersection	172.7	173.0	0.4	8	7	15	19	23	42
8	Bandartaki Bus stand	164.6	165.2	0.7	10	7	17	24	16	40
9	Fatikchori Intersection	207.0	207.5	0.6	17	6	23	23	16	39
10	Nurani Madrasa Bus Stand	158.6	159.1	0.6	11	5	16	12	26	38
11	Baroyar Bazar	178.4	179.0	0.7	13	4	17	23	14	37
12	Chandina-Debidwar Intersection	73.0	73.6	0.7	15	4	19	18	18	36
13	Next to Gazaria Bus Stand	29.5	29.7	0.3	12	13	25	12	22	34
14	Nayabari Bus Stand	14.7	15.1	0.5	12	5	17	16	12	28
15	Borotakia Bazar/ Bus Stand	209.7	210.0	0.4	8	5	13	12	15	27
16	Md. Ali Bazar/ Bus Stand	142.0	142.4	0.5	6	10	16	7	19	26
17	Eliotganj Bus Stand	58.7	59.0	0.4	8	2	10	15	10	25
18	Chandpur-Comilla Intersection	94.9	95.5	0.7	10	7	17	14	10	24
19	Haratoli Primary School/Bus Stand	92.7	93.2	0.6	10	3	13	16	7	23
20	149 KM Post	149.0	149.1	0.2	10	7	17	15	7	22
21	Shitakundo Bazar	226.6	227.0	0.5	8	5	13	10	12	22
22	Banshbaria Bazar	235.3	235.6	0.4	11	2	13	13	9	22
23	Kumira Bazar	239.7	239.9	0.3	10	1	11	14	6	20
24	Mahipal Intersection	157.8	158.2	0.5	7	4	11	8	11	19
25	Harikhola Bus Stand	71.0	71.5	0.6	8	2	10	9	9	18
26	ComillaMainamati Intersection	90.3	90.8	0.6	8	3	11	13	4	17
27	Dhanghat Bazar/ ?Bus Stand	176.0	176.4	0.5	10	1	11	11	4	15
28	Haji Fakir Hat Bus Stand	213.3	213.8	0.6	7	3	10	9	5	14
29	BRAC Office Bus Stand	149.5	150.1	0.7	8	2	10	11	2	13
30	End of Feni By Pass	160.7	161.6	1.0	6	4	10	8	5	13
31	ShitalpurHigh School	245.3	245.7	0.5	8	2	10	9	2	11
Total = 16.5										
1	Daudkandi Bus Stand	42.9	-	-	6	6	12	11	16	27
2	Boropa Bus Stand	47.6	-	-	8	1	9	13	8	21
3	Dippur Bus Stand	53.0	-	-	6	1	7	11	8	19
4	Chhilonia Bus Stand	162.0	-	-	5	3	8	7	11	18
5	Ansar Battalion Office	198.0	-	-	6	1	7	12	6	18
6	Madanpur Bus Stand	16.6	-	-	8	2	10	10	7	17
7	Dariakandi Bus Stand	21.2	-	-	5	2	7	6	4	10

N-2 DHAKA-SYLHET HIGHWAY

SL. NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	ShahbandarBauchia Bus Stand	215.3	215.5	0.3	6	3	9	12	17	29
2	Bhulta Bazar/ Bus Stand	27.0	27.2	0.3	6	5	11	14	10	24
3	Before 86 Km Post	85.9	86.5	0.7	15	2	17	18	2	20
4	Islampur Bazar	111.0	111.3	0.4	3	4	7	5	14	19
5	Shahbajpur Bazar	99.7	99.9	0.3	6	1	7	12	6	18
6	Kusumbag Market	212.1	212.6	0.6	8	4	12	10	5	15
7	Kamalpur Bazar	220.9	221.1	0.3	5	3	8	8	6	14
8	Baruita Bazar/ Bus stand	97.0	97.1	0.2	6	0	6	14	0	14
9	JagannathpurPrimary School	209.3	209.6	0.4	4	3	7	4	9	13
10	Sherpur Bazar	236.0	236.5	0.6	7	2	9	8	4	12
11	Shahbajpur/Bus Stand	99.2	99.4	0.3	7	1	8	8	1	9
12	Srimangal Thana Health Complex	195.1	195.3	0.3	6	1	7	6	2	8
13	Hafizpur Bus Stand	165.5	165.8	0.4	3	4	7	3	4	7
Total = 5.1										
1	Brahmanbaria Intersection	93.3	-	-	9	4	13	26	22	48
2	Shaheprotap Intersection	50.0	-	-	14	8	22	18	20	38
3	Bhelanagar Bazar	53.0	-	-	10	8	18	25	13	38
4	Near Ashuganj Rice Mill	92.0	-	-	14	0	14	23	5	28
5	Baro cha Bus Stand	74.7	-	-	8	3	11	13	15	28
6	Sarail Road Intersection	93.7	-	-	9	3	12	15	10	25
7	Morjal Bazar	70.0	-	-	7	4	11	7	12	19
8	Kaliabazar Bus Stand	197.5	-	-	8	1	9	10	8	18
9	Islamabad Bus Stand	95.9	-	-	6	0	6	13	4	17
10	Kararchar	53.7	-	-	9	1	10	12	3	15
11	Sayednagar	57.0	-	-	6	0	6	8	6	14
12	Nayabazar Bus Stand	171.2	-	-	6	0	6	6	8	14
13	Bahubal Intersection	168.6	-	-	3	4	7	3	10	13
14	Itakhola	56.4	-	-	4	5	9	6	6	12
15	Panchdona Bazar	45.5	-	-	3	3	6	6	5	11
16	Shekherchar Bazar	43.4	-	-	6	2	8	6	4	10
17	Panchrukhi Bazar	32.8	-	-	3	3	6	4	6	10
18	Kariala Bus Stand	87.3	-	-	8	1	9	8	1	9
19	Narshingdi Intersection	49.2	-	-	5	2	7	5	4	9
20	Raipur/Nilkuthi Bus Stand	81.4	-	-	5	2	7	6	3	9
21	Mokam Bazar Bus Stand	205.9	-	-	4	2	6	4	4	8
22	Giasnagar Bazar	203.9	-	-	4	2	6	4	3	7

N-3 DHAKA-MYMENSINGH HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Bharaduba Bazar	85.0	85.3	0.4	14	4	18	21	12	33
2	Mymensingh Polytechnic	118.7	119.2	0.6	4	3	7	4	9	13
3	Tongi Market	21.6	21.8	0.3	6	1	7	6	3	9
4	Tongi Station Road Intersection	22.7	22.9	0.3	6	1	7	6	1	7
Total = 1.6										
1	Gilarchala Bazar	57.4	0	0	7	1	8	10	2	12
2	Goforgaon Road Intersection	80.4	0	0	8	0	8	9	1	10
3	26 KM Post	26	0	0	5	2	7	5	5	10
4	Board Bazar	28.9	0	0	6	2	8	6	3	9
5	Seed Store Intersection	72.1	0	0	4	4	8	4	5	9
6	Porabari Bazar	40.9	0	0	7	0	7	8	0	8

N-4 GAZAPUR-TANGAIL-JAMALPUR HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Rupali Flour Mill	99.0	99.3	0.4	8	4	12	28	28	56
2	Shohagpur Bazar	61.2	61.4	0.3	9	3	12	13	10	23
3	Latifpur Bazar	53.8	54.2	0.5	11	3	14	11	5	16
4	Nabinagar Intersection	50.8	51.0	0.3	7	3	10	11	3	14
5	TangailTown Intersection	94.3	94.5	0.3	9	4	13	9	4	13
6	Korotia Bazar	87.6	87.8	0.3	6	1	7	11	2	13
7	Chanda Picnic Spot	50.0	50.4	0.5	6	0	6	6	0	6
Total= 2.6										
1	Deohata Bazar	64.7	-	-	16	5	21	16	21	37
2	Jamurki Bus Stand	77.2	-	-	6	1	7	29	6	35
3	Kurni Bazar	71.0	-	-	8	1	9	21	12	33
4	Dhalla Bus Stand	73.8	-	-	7	2	9	8	10	18
5	Boardghar Bazar	59.7	-	-	5	8	13	5	12	17
6	Bhyanpur Intersection	104.9	-	-	6	5	11	11	5	16
7	Natiapara Bazar	80.4	-	-	6	1	7	7	4	11

N-5 DHAKA-ARICHA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Pukhuria Bus Stand	73.4	73.6	0.3	15	14	29	22	55	77
2	Teara Bus Stand	82.2	82.7	0.6	26	11	37	28	25	53
3	Golora/ Kamta Bus Stand	57.5	58.0	0.6	11	10	21	20	32	52
4	Chamrai/ Dhulivita Bus Stand	39.4	40.0	0.7	13	5	18	16	34	50
5	Borongail Bus Stand	77.3	78.0	0.8	14	7	21	21	14	35
6	Kamardia Bus Stand	60.0	60.4	0.5	8	7	15	8	26	34
7	KM 57 (Near Bridge)	56.5	56.7	0.3	8	3	11	14	20	34
8	Bathuli Bus Stand	50.7	51.4	0.8	12	7	19	16	17	33
9	Manikganj Police Line	62.3	62.6	0.4	7	6	13	11	22	33
10	Joypara bus Stand	41.9	42.0	0.2	15	1	16	23	9	32
11	BaniJhuri Bus Stand	70.5	71.0	0.6	7	6	13	9	21	30
12	Manikganj Intersection	63.2	63.4	0.3	9	12	21	10	17	27
13	Savar Bazar Bus Stand	25.5	26.0	0.6	16	4	20	17	7	24
14	Taraghat Bus Stand	68.0	68.5	0.6	13	3	16	17	6	23
15	Nabi Nagar Bus Stand	33.5	34.0	0.6	11	3	14	12	11	23
16	Mohadevpur Bus Stand	76.7	76.9	0.3	6	6	12	6	17	23
17	Borobaria Bazar	54.0	54.5	0.6	8	2	10	9	5	14
Total= 8.8										
1	Muljan Bus Stand	65.0	-	-	8	5	13	15	19	34
2	Hemayetpur-Shingair Intersection	19.0	-	-	7	4	11	9	14	23
3	Nayadingi Bus Stand	55.8	-	-	7	3	10	13	7	20
4	Falsatla Bus Stand/Bazar	80.2	-	-	8	6	14	8	9	17
5	Kalampur/ Shaturia Bus Stand	45.3	-	-	7	2	9	7	7	14

N-6 NAGARBARI BANGLABANDHA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Kalitala Bus Stand	263.7	264.0	0.4	9	1	10	18	11	29
2	Laldighi Bazar/Bus Stand	290.8	291.3	0.6	2	6	8	2	26	28
3	Mithapukur Intersection	305.5	306.0	0.6	9	3	12	12	14	26
4	Komorpur Bazar	266.3	266.5	0.3	10	1	11	11	14	25
5	Katakhali Bazar	260.1	260.3	0.3	6	1	7	9	15	24
6	Kamarpukur Bazar/Bas Stand	364.6	365.0	0.5	10	1	11	17	5	22
7	Sonka Bazar/Bus Stand	190.2	190.7	0.6	13	1	14	15	5	20
8	Chandakona Bazar	181.3	181.5	0.3	9	3	12	11	8	19
9	Borodargah Bus Stand	293.0	298.2	0.3	7	2	9	8	9	17
10	KakoliBeluahat Bazar	259.4	259.6	0.3	6	1	7	11	6	17
11	Nine Mia Hat/Bus Stand	204.9	205.0	0.2	5	1	6	5	9	14
12	Nasirunnesa School/Intersection	198.0	198.3	0.4	6	1	7	6	7	13
13	Fasitala School/Bus Stand	249.0	249.5	0.6	9	0	9	11	1	12
14	Garadoha Bus Stand	143.9	144.0	0.2	8	0	8	10	1	11
15	Dharmadesh Bus Stand	320.8	321.2	0.5	7	1	8	7	4	11
16	Salander Chowdhury Hat	441.2	441.3	0.2	9	0	9	10	1	11
17	Gobidaganj Thana Intersection	254.6	254.7	0.2	6	1	7	6	5	11
18	Boalia Bazar	159.5	159.7	0.3	9	0	9	9	1	10
19	Taraganj Intersection	355.4	355.6	0.3	4	3	7	6	4	10
20	Bus Terminal	365.6	366.0	0.5	7	1	8	7	2	9
21	KhochabanChotoDeuri Bus Stand	432.1	432.3	0.3	8	1	9	8	1	9
Total= 7.9										
1	Shahebganj Bazar	166.9	-	-	10	2	12	16	11	27
2	Khochabari Bazar	430.4	-	-	8	2	10	10	11	21
3	Mirzapur Bazar	193.8	-	-	6	2	8	11	7	18
4	29 Mile Bus Stand	427.6	-	-	8	0	8	14	3	17
5	Sholo Mile Intersection/ Bus Stand	179.0	-	-	4	2	6	10	7	17
6	Ghurka Bazar/ Bus Stand	170.9	-	-	10	2	12	12	4	16
7	Ekarchali Bazar/ Bus Stand	349.0	-	-	4	3	7	7	8	15
8	Hatikamrul Bazar/ Bus Stand	165.7	-	-	6	1	7	9	4	13
9	Baghopara Bazar	228.9	-	-	5	0	5	13	0	13
10	GhogaBridge/ Bus Stand	185.8	-	-	4	3	7	7	5	12
11	Pirganj Bazar	287.9	-	-	7	0	7	7	4	11
12	Domdoma Bazar/ Bus Stand	317.5	-	-	2	4	6	2	9	11
13	Bhulyangati Bazar Intersection	174.8	-	-	4	3	7	5	5	10
14	Thakurgaon Intersection	437.3	-	-	2	4	6	2	8	10
15	Dhayerhat Bazar/ Bus Stand	279.0	-	-	5	2	7	5	4	10
16	Gobindoganj Bazar	254.1	-	-	7	1	8	7	1	8
17	DhakkamaraMor, Ruhia Intersection	472.7	-	-	4	2	6	4	3	7

N-7 NAGARBARI RAJSHAHI HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Jhalmalia Bazar	231.0	231.4	0.5	15	1	16	18	6	24
2	Chandpur Bazar	223.0	223.5	0.6	8	2	10	14	9	23
3	Pullapukur Bus Stand	243.8	244.2	0.5	5	4	9	6	16	22
4	Maligacha Bus Stand	160.7	161.0	0.4	6	2	8	9	13	22
5	Puthya Bazar	233.3	233.4	0.2	7	7	14	13	9	22
6	Kalapur Intersection	148.0	148.3	0.4	11	2	13	13	5	18
7	Baneswar Bazar	242.9	243.0	0.2	9	5	14	12	6	18
8	Bonpara Bus Stand	197.6	197.9	0.4	10	4	14	10	7	17
9	Ahmedpur Bazar	203.8	204.1	0.4	10	1	11	10	6	16
10	Chargabindapur Bazar	119.9	120.4	0.6	8	0	8	9	6	15
11	Natore Police Line	213.7	214.0	0.4	5	3	8	9	5	14
12	Gomati Bazar	186.0	186.3	0.4	8	0	8	9	4	13
13	Ataikola Bazar	135.4	135.8	0.5	7	2	9	9	3	12
14	Gorosthan Bazar	224.5	224.8	0.4	8	1	9	9	2	11
15	Tebunia Bazar	162.0	162.4	0.5	6	1	7	6	2	8
Total= 6.4										
1	Kapasias Bazar/ Bus Stand	249.0	-	-	4	3	7	12	11	23
2	Hazratpur Bazar	207.6	-	-	10	2	12	12	6	18
3	Dashuria Intersection	175.4	-	-	9	0	9	12	4	16
4	Durgapur Intersection	240.7	-	-	4	3	7	9	5	14
5	Chinakhora Bazar	123.0	-	-	5	3	8	6	5	11
6	Dariapur Bus Stand	114.6	-	-	6	2	8	8	1	9
7	GanguhatiSchool	129.2	-	-	6	1	7	7	2	9
8	Tarapur Bazar/ Bus Stand	235.8	-	-	3	4	7	4	5	9
9	Madpur Bazar	133.1	-	-	5	3	8	5	3	8

N-8 DAULATDIA-JHENAIDAH-KHULNA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	239 KM Post	239.0	239.5	0.6	6	4	10	9	26	35
2	Hat Gopalpur Bazar/Bus Stand	190.0	190.4	0.5	11	2	13	13	10	23
3	Goaland Bus Stand	104.5	104.7	0.3	9	4	13	10	11	21
4	Ujan Char tala Bus Stand	105.3	105.6	0.4	12	2	14	12	7	19
5	Khoertola	271.5	272.0	0.6	7	7	14	8	11	19
6	Jhenaidah Police Station	228.4	229.0	0.7	11	2	13	14	5	19
7	TNO Office/Thana Road Intersection	244.1	244.6	0.6	13	1	14	14	4	18
8	Rajghat Bazar/ Bus Stand	305.5	306.0	0.6	10	1	11	12	5	17
9	Narial Intersection / Hospital	176.1	176.4	0.4	6	4	10	6	9	15
10	Lakpur Bus Stand	342.5	342.6	0.2	6	1	7	8	7	15
11	RupshaGhat Intersection	335.4	335.7	0.4	6	5	11	7	5	12
12	Noapara Bus Stand	344.3	344.7	0.5	6	4	10	8	4	12
Total= 5.8										
1	DauladiaHigh School	101.0	-	-	8	3	11	8	9	17
2	Magura Police Line	177.7	-	-	6	1	7	9	4	13
3	Rajarhat Bazar/Chuknagar Intersection	279.3	-	-	5	3	8	5	6	11
4	Kanaipur Bazar/ Bus Stand	135.2	-	-	5	1	6	5	6	11

N-9 DHAKA-MAWA-BARISAL HIGHWAY

SL NO	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO			NO OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Maligram Bus Stand	59.1	59.3	0.2	9	2	11	10	4	14
2	Rahmatpur Bus Stand	246.8	247.3	0.5	3	5	8	3	11	14
3	Dullah Bus Stand	215.0	-	-	7	1	8	8	6	14
4	Abdullahpur Bazar	14.0	-	-	6	1	7	7	2	9

N-405 JAMUNA BRIDGE APPROACH ROAD

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Konaban Bus Stand	32.0	32.3	0.4	19	3	22	73	25	98
2	Madhya Bhadrachhat	35.0	35.6	0.7	6	3	9	11	18	29
3	Dhopakandi	42.6	42.7	0.2	6	1	7	6	7	13
4	Panchlia Bazar	40.7	41.1	0.5	8	1	9	9	3	12
5	Nalka Bus Stand	37.9	38.2	0.4	6	2	8	6	5	11
Total= 2.2										
1	KoddorMor	27.2	-	-	11	6	17	13	22	35
2	Shalla Bus Stand	7.9	-	-	5	5	10	12	17	29
3	Saydabad Bus Stand	25.3	-	-	8	2	10	10	7	17

Annex 3

Analysis of Accident Spots by PPRC Team

N-1 DHAKA-CHITTAGONG HIGHWAY

5 highest accident recorded spots;SL. NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
2	Narayanganj Road Intersection	11.7	12.2	0.6	45	10	55	49	25	74
1	Madhya Bauchia Bus Stand	36.0	36.6	0.7	26	18	44	43	51	94
4	Feni-Laxmipur Intersection	157.0	157.5	0.6	28	11	39	40	16	56
3	MeghnaGhat Intersection	27.3	27.6	0.4	24	6	30	40	23	63
13	Next to Gazaria Bus Stand	29.5	29.7	0.3	12	13	25	12	22	34
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart							% of 31+7=38	
Bus Stand	20	Madhya Bauchia Bus Stand(1), Fazilpur Madrasa/ Bus Stand(5), Muhuriganj Bus Stand/ Intersection(7), Bandartaki Bus stand(8), Nurani Madrasa Bus Stand(10), Next to Gazaria Bus Stand(13), Nayabari Bus Stand(14), Borotakia Bazar/ Bus Stand(15), Md. Ali Bazar/ Bus Stand(16), Eliotganj Bus Stand(17), Haratoli Primary School/Bus Stand(19), Harikhola Bus Stand(25), Haji Fakir Hat Bus Stand(28), BRAC Office Bus Stand(29), Daudkandi Bus Stand(1/32), Boropa Bus Stand(2/33), Dippur Bus Stand(3/34), Chhilonia Bus Stand(4/35), Madanpur Bus Stand(6/37), Dariakandi Bus Stand(7/38)							52.63%	
Road Intersection& Label Crossing	9	Narayanganj Road Intersection(2), MeghnaGhat Intersection(3), Feni-Laxmipur Intersection(4), Fatikchori Intersection(9), Chandina-Debidwar Intersection(12), Chandpur-Comilla Intersection(18), Mahipal Intersection(24), ComillaMainamati Intersection(26), Before Feni Level Crossing(6),							21.05% + 2.63% =23.68%	
Bazar	5	Baroyar Bazar(11), Shitakundo Bazar(21), Banshbaria Bazar(22), Kumira Bazar(23), Dhanghat Bazar/ ?Bus Stand(27),							13.16%	
Other spots	4	149 KM Post(20), End of Feni By Pass(30), Shitalpur High School(31), Ansar Battalion Office(5/36)							10.53%	
4 types; 3 identical and cross-cutting	38	All accident spots are places where people gather in large numbers; no freeway to rash and negligently drive; no scope for over-speeding, no scope for crash in high speed; high speed is not at all a factor for accident, rather low speed, stationary position and taking off from parking caused all these accidents.							100%	

N-2 DHAKA-SYLHET HIGHWAY

SL. NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
2/15	Shaheprotap Intersection	50.0	-	-	14	8	22	18	20	38
3/16	Bhelanagar Bazar	53.0	-	-	10	8	18	25	13	38
3	Before 86 Km Post	85.9	86.5	0.7	15	2	17	18	2	20
4/17	Near Ashuganj Rice Mill	92.0	-	-	14	0	14	23	5	28
1/14	Brahmanbaria Intersection	93.3	-	-	9	4	13	26	22	48
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart							% of 13+22=35	
Bus Stand	12	ShahbandarBauchia Bus Stand(1), Bhulta Bazar/ Bus Stand(2), Baruita Bazar/ Bus stand(8), Shahbajpur/Bus Stand(11), Hafizpur Bus Stand(13), , Baro cha Bus Stand(5/18), Kaliabazar Bus Stand(8/21), Islamabad Bus Stand(9/22), Nayabazar Bus Stand(12/25), Karijala Bus Stand(18/31), Raipur/Nilkuthi Bus Stand(20/33), Mokam Bazar Bus Stand(21/34)							35.29%	
Road Intersection	5	Brahmanbaria Intersection(1/14), Shaheprotap Intersection(2/15), Sarail Road Intersection(6/19), Bahubal Intersection(13/26), Narshingdi Intersection(19/32)							14.71%	
Bazar	11	Islampur Bazar(4), Shahbajpur Bazar(5), Kusumbag Market(6), Kamalpur Bazar(7), Sherpur Bazar(10), Bhelanagar Bazar(3/16), Morjal Bazar(7/20), Panchdona Bazar(15/28), Shekherchar Bazar(16/29), Panchrukhi Bazar(17/30), Giasnagar Bazar(22/35)							32.35%	
Other spots; 6 types; All Bus stands	6	Before 86 Km Post(3), Srimangal Thana Health Complex(12), Near Ashuganj Rice Mill(4/17), Kararchar(10/23), Sayednagar(11/24), Itakhola(14/27),							17.65%	
Total	34								100%	

N-3 DHAKA-MYMENSINGH HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Bharaduba Bazar	85.0	85.3	0.4	14	4	18	21	12	33
1/5	Gilarchala Bazar	57.4	0	0	7	1	8	10	2	12
2/6	Goforgaon Road Intersection	80.4	0	0	8	0	8	9	1	10
4/8	Board Bazar	28.9	0	0	6	2	8	6	3	9
5/9	Seed Store Intersection	72.1	0	0	4	4	8	4	5	9
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart							% of 4+6=10	
Bus Stand	0								0%	
Road Intersection	3	Tongi Station Road Intersection(4), Goforgaon Road Intersection(2/6), Seed Store Intersection(5/9).							30%	
Bazar	5	Bharaduba Bazar(1), Tongi Market(3), Gilarchala Bazar(1/5), Board Bazar(4/8), Porabari Bazar(6/10)							50%	
Other spots;	2	Mymensingh Polytechnic(2), 26 KM Post(3/7)							20%	
Total	10								100%	

N-4 GAZAPUR-TANGAIL-JAMALPUR HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1/8	Deohata Bazar	64.7	-	-	16	5	21	16	21	37
3	Latifpur Bazar	53.8	54.2	0.5	11	3	14	11	5	16
5	Tangail Town Intersection	94.3	94.5	0.3	9	4	13	9	4	13
5/12	Boardghar Bazar	59.7	-	-	5	8	13	5	12	17
1	Rupali Flour Mill	99.0	99.3	0.4	8	4	12	28	28	56
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 7+7=14
Bus Stand	2	Jamurki Bus Stand(2/9), Dhalla Bus Stand(4/11)								14.28%
Road Intersection	3	Nabinagar Intersection(4), Tangail Town Intersection(5), Bhyampur Intersection(6/13)								21.43%
Bazar	7	Shohagpur Bazar(2), Latifpur Bazar(3), Korotia Bazar(6), Deohata Bazar(1/8), Kurni Bazar(3/10), Boardghar Bazar(5/12), Natiapara Bazar(7/14),								50%
Other spots;	2	Rupali Flour Mill(1), Chanda Picnic Spot(7)								14.29%
Total	14									100%

N-5 DHAKA-ARICHA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
2	Teara Bus Stand	82.2	82.7	0.6	26	11	37	28	25	53
1	Pukhuria Bus Stand	73.4	73.6	0.3	15	14	29	22	55	77
3	Golora/ Kamta Bus Stand	57.5	58.0	0.6	11	10	21	20	32	52
5	Borongail Bus Stand	77.3	78.0	0.8	14	7	21	21	14	35
12	Manikganj Intersection	63.2	63.4	0.3	9	12	21	10	17	27
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 17+5=22
Bus Stand	16	Pukhuria Bus Stand(1), Teara Bus Stand(2), Golora/ Kamta Bus Stand(3), Chamrai/ Dhulivita Bus Stand(4), Borongail Bus Stand(5), Kamardia Bus Stand(6), Bathuli Bus Stand(8), Joypara bus Stand(10), BaniJhuri Bus Stand(11), Savar Bazar Bus Stand(13), Taraghat Bus Stand(14), Nabi Nagar Bus Stand(15), Mohadevpur Bus Stand(16), Muljan Bus Stand(1/18), Nayadingi Bus Stand(3/20), Kalampur/ Shaturia Bus Stand(5/22)								72.73
Road Intersection	2	Manikganj Intersection(12), Hemayetpur-Shingair Intersection(2/19)								9.09
Bazar	2	Borobaria Bazar(17), Falsatla Bus Stand/Bazar(4/21)								9.09
Other spots;	2	KM 57 (Near Bridge)(7), Manikganj Police Line(9),								9.09
Total	22									100%

N-6 NAGARBARI BANGLABANDHA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
7	Sonka Bazar/Bus Stand	190.2	190.7	0.6	13	1	14	15	5	20
3	Mithapukur Intersection	305.5	306.0	0.6	9	3	12	12	14	26
8	Chandakona Bazar	181.3	181.5	0.3	9	3	12	11	8	19
1/22	Shahebganj Bazar	166.9	-	-	10	2	12	16	11	27
6/27	Ghurka Bazar/ Bus Stand	170.9	-	-	10	2	12	12	4	16
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 21+17=38
Bus Stand	17	Kalitala Bus Stand(1), Laldighi Bazar/Bus Stand(2), Kamarpukur Bazar/Bas Stand(6), Sonka Bazar/Bus Stand(7), Borodargah Bus Stand(9), Nine Mia Hat/Bus Stand(11), Fasitala School/Bus Stand(13), Garadoha Bus Stand(14), Dharmadesh Bus Stand(15), KhochabanChotoDeuri Bus Stand(21), 29 Mile Bus Stand(4/25) , Ghurka Bazar/ Bus Stand(6/27), Ekarchali Bazar/ Bus Stand(7/28), Hatikamrul Bazar/ Bus Stand(8/29), Ghoga Bridge/ Bus Stand(10/31), Domdoma Bazar/ Bus Stand(12/33), DhayerhatBazar/ Bus Stand(15/36),								44.74%
Road Intersection	8	Mithapukur Intersection(3), Nasirunnesa School/Intersection(12), Gobidaganj Thana Intersection(17), Taraganj Intersection(19), Sholo Mile Intersection/ Bus Stand(5/26), Bhulyangati Bazar Intersection(13/34), Thakurgaon Intersection(14/35), DhakkamaraMor, Ruhia Intersection(17/38)								21.05%
Bazar	12	Komorpur Bazar(4), Katakhal Bazar(5), Chandakona Bazar(8), KakoliBeluahat Bazar(10), Salander Chowdhury Hat (16), Boalia Bazar(18), Shahebganj Bazar(1/22), Khochabari Bazar(2/23), Mirzapur Bazar(3/24), Baghopara Bazar(9/30), Pirganj Bazar(11/32), Gobindoganj Bazar(16/37)								31.58%
Other spots;	1	Bus Terminal(20),								2.63%
Total	38									100%

N-7 NAGARBARI RAJSHAHI HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injur ed	Tot al
1	Jhalmalia Bazar	231.0	231.4	0.5	15	1	16	18	6	24
5	Puthya Bazar	233.3	233.4	0.2	7	7	14	13	9	22
7	Baneswar Bazar	242.9	243.0	0.2	9	5	14	12	6	18
8	Bonpara Bus Stand	197.6	197.9	0.4	10	4	14	10	7	17
6	Kalapur Intersection	148.0	148.3	0.4	11	2	13	13	5	18
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 15+9=24
Bus Stand	6	Pullapukur Bus Stand(3), Maligacha Bus Stand(4), Bonpara Bus Stand(8), Kapasia Bazar/ Bus Stand(1/16), Dariapur Bus Stand(6/21), Tarapur Bazar/ Bus Stand(8/23)								25%
Road Intersection	3	Kalapur Intersection(6), DashuriaIntersection(3/18), Durgapur Intersection(4/19),								12.5%
Bazar	13	Jhalmalia Bazar(1), Chandpur Bazar(2), Puthya Bazar(5), Baneswar Bazar(7), Ahmedpur Bazar(9), Chargabindapur Bazar(10), Gomati Bazar(12), Ataikola Bazar(13), Gorosthan Bazar(14), Tebunia Bazar(15), Hazratpur Bazar(2/17), Chinakhora Bazar(5/20), Madpur Bazar(9/24)								54.17%
Other spots;	2	Natore Police Line(11), Ganguhati School(7/22)								8.33%
Total	24									100%

N-8 DAULATDIA-JHENAIDAH-KHULNA HIGHWAY

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injur ed	Tot al
4	Ujan Char tala Bus Stand	105.3	105.6	0.4	12	2	14	12	7	19
5	Khoertola	271.5	272.0	0.6	7	7	14	8	11	19
7	TNO Office/Thana Road Intersection	244.1	244.6	0.6	13	1	14	14	4	18
6	Jhenaidah Police Station	228.4	229.0	0.7	11	2	13	14	5	19
2	Hat Gopalpur Bazar/Bus Stand	190.0	190.4	0.5	11	2	13	13	10	23
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 12+4=16
Bus Stand	4	Goalando Bus Stand(3), Ujan Char tala Bus Stand(4), Lakpur Bus Stand(10), Noapara Bus Stand(12),								25%
Road Intersection	4	TNO Office/Thana Road Intersection(7), Narial Intersection / Hospital(9), RupshaGhatIntersection(11), Rajarhat Bazar/Chuknagar Intersection(3/15),								25%
Bazar	3	Hat Gopalpur Bazar/Bus Stand(2), Rajghat Bazar/ Bus Stand(8), Kanaipur Bazar/ Bus Stand(4/16)								18.75%
Other spots;	5	239 KM Post(1), Khoertola(5), Jhenaidah Police Station(6), Dauladia High School(1/13), Magura Police Line(2/14),								31.25%
Total	16									100%

N-9 DHAKA-MAWA-BARISAL HIGHWAY*

SL NO	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO			NO OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injur ed	Tot al
1	Maligram Bus Stand	59.1	59.3	0.2	9	2	11	10	4	14
2	Rahmatpur Bus Stand	246.8	247.3	0.5	3	5	8	3	11	14
3	Dullah Bus Stand	215.0	-	-	7	1	8	8	6	14
4	Abdullahpur Bazar	14.0	-	-	6	1	7	7	2	9
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart								% of 4
Bus Stand	3	Maligram Bus Stand(1), Rahmatpur Bus Stand(2), Dullah Bus Stand(3),								75%
Road Intersection	0									0
Bazar	1	Abdullahpur Bazar(4)								25%
Other spots;	4									
Total										100%

- This list contains only 4 accident sites and hence the 5th one could not be annexed

N-405 JAMUNA BRIDGE APPROACH ROAD

SL NO.	NAME OF LOCATION	KM	KM	Distance (KM)	ACCIDENT NO.			NO. OF CASUALTIES		
					Fatal	Non Fatal	Total	death	Injured	Total
1	Konaban Bus Stand	32.0	32.3	0.4	19	3	22	73	25	98
1/6	KoddorMor	27.2	-	-	11	6	17	13	22	35
2/7	Shalla Bus Stand	7.9	-	-	5	5	10	12	17	29
3/8	Saydabad Bus Stand	25.3	-	-	8	2	10	10	7	17
2	Madhya Bhadrghat	35.0	35.6	0.7	6	3	9	11	18	29
SUMMARY OF THE ACCIDENT SPOTS AND RELATED INFORMATION;										
Type of spot where accident occurred	No	Names of spots with serial number shown in the prepared chart							% of 8	
Bus Stand	5	Konaban Bus Stand(1), Panchlia Bazar(4), Nalka Bus Stand(5), Shalla Bus Stand(2/7), Saydabad Bus Stand(3/8)							62.5%	
Road Intersection	0								0	
Bazar	0								0	
Other spots;	3	Madhya Bhadrghat(2), Dhopakandi(3), KoddorMor(1/6)							37.5%	
Total	8								100%	

Annex 4

On-site FGDs & Situation Reports

Dhaka-Tangail: Chandra Mor Spot

FGD

Participants – 7, President local AL unit, employee of RHD, local journalist, manager of Shyamali transport com, treasurer of Subornajame-masjid com, former president Chandra bazar com, local businessman and former transport worker

Q.1 Nature and causes of traffic congestion					
Congestion time	Recent trends in the problem	Time loss due to congestion	Causes	Who suffers most due to congestion	Remedial suggestions to reduce congestion
<ul style="list-style-type: none"> 8-10 a.m. Short congestion around 12 when long-distance buses from Dhaka and north Bengal cross each other Around 5 p.m. during office break Thursday and Friday most congestion-prone due to weekly leave by workers and their return Annually, eid time congestion 	<ul style="list-style-type: none"> Congestion significantly increased over last 3 years 	<ul style="list-style-type: none"> Average time loss 1.5 hours during peak congestion time in normal days 4-5 hours during eid holidays 	<ul style="list-style-type: none"> Huge increase in number of vehicles – 22 district traffic passes through the spot but bus stands are inadequate Increasing presence of unauthorized 3-wheelers Absence of well-identified parking spots Haphazard parking Jaywalking by pedestrians Police harassment and stoppages for extortion 	<ul style="list-style-type: none"> Passengers of long distance buses who experience time delays Businessmen carrying goods lose time School children lose time 	<ul style="list-style-type: none">
Q.2 Accident-related issues					
<i>Recent trends in accidents</i>	<i>Victims</i>	<i>Nature of harm</i>	<i>Which type of vehicles involved in accidents</i>	<i>Causes of accidents</i>	<i>Post-accident arrangements/ Remedial action</i>
<ul style="list-style-type: none"> On average 2 fatalities per month and 5-7 serious injuries There is no 	<ul style="list-style-type: none"> Pedestrians 	<ul style="list-style-type: none"> Death Economic ruin due to injuries 	<ul style="list-style-type: none"> Long-distance bus/trucks Unauthorized legunas (3-wheelers) and 	<ul style="list-style-type: none"> Illegal occupation of roads thus reducing effective road 	<ul style="list-style-type: none"> Two hospitals in vicinity first stop for accident victims – one near Chandra spot: Suborno hospital established by Barrister RafiqulHuq and

<p>specific time in which accident occurs</p> <ul style="list-style-type: none"> Accidents do not occur in the congestion spots per se but at a distance of about 500 m to 1 km on either side of the congestion spot Accidents and injuries occur not due to speeding but haphazard road-crossing and movement of pedestrians and passengers and speed bursts after leaving bus stand 			<p>their unlicensed drivers</p>	<p>size</p> <ul style="list-style-type: none"> Over-taking Proliferation of defective vehicles Absence of speed-breakers and traffic signs Tendency of speeding to avoid police inspection by drivers without valid papers 	<p>other 7 km away Kaliakorupazila hospital</p> <ul style="list-style-type: none"> Seriously injured have to be transported to Dhaka Typically after accident, drivers flees and if caught get beaten, local public usually express resentment but take no action per se Police and govt officials take no specific remedial action but 400 m away from the spot, local RMG factories use community policing (their own factory guards) – barricades by rope to assist safe crossing by workers and and pedestrians during peak hours, this has brought incidence of accidents significantly during last 6 months FGD also reveal that punishment for accident perpetrators are not visible, police typically take charge of dead body and confiscate vehicle. If perpetrator manage to bribe police, no case is lodged otherwise case
Q. 3 Suggestions					
<ul style="list-style-type: none"> Bus stand with adequate space for inter-district traffic 4 lanes for the spot Different lanes for different vehicle types Illegal occupation of roads to be freed Unauthoized 3-wheelers to be tackled <p>Parking lots to be identified and vehicles obliges to park in these spots</p>					

FGD

Participants: 30, male 23, female 7

Bus-owner association office-bearers, businessmen, retired teacher, AL leaders, UP members, mechanic and welding professionals, shop-owners, contractor, filling station employee, workshop mechanic and car dealers

Issue	FGD 1: Tangail Bus owner association (7 persons)	FGD 2: Businessmen + bazar com (10 persons)	FDG 3: local community (7 teachers from Tarotia pry school + community members)
Accident-related	<ul style="list-style-type: none"> Most accidents occur in the 5.5 km road strip between Rabna point of Tangail bypass and Taratia pry school Main accident spots: Rabna CNG filling station, Intersection of side-road to Tangail station/city and Taratia pry school point on the highway Accident causes: i) too many vehicles vis-à-vis road space ii) informal 3-wheelers on highway iii) carelessness of pedestrians and passengers in road crossing iv) too many unmarked turning points on highway v) absence of speed-breakers vi) where speed-breakers exist, they are not visible due to lack of proper marking vii) road-side vegetation obstructing view at turns viii) lack of hard shoulders and sudden drop on the sides ix) speeding inter-district bus/trucks x) untrained drivers and helpers driving vehicles Accident trend: i) incidence has gone up over the last 3 years ii) 90 accident per month over the 5.5 km stretch of the highway some with fatalities and most causing severe injuries Victims: passengers, pedestrians and school children How accidents occur: mainly when passengers and pedestrians are crossing roads and also in head-on collision between vehicles 	<ul style="list-style-type: none"> Highway at Elenga point is the cross-road of many feeder roads making it very unsafe. There is also a high school on the road side At least 70 major and minor accidents occurred during last 1 year CNG/easy bikes have added to the traffic volume Road condition good but no speed limit signs or zebra crossing markings Pedestrians most frequent victims Victim also include easy-bike/cng passengers and motor cyclists Long distance buses are the biggest perpetrator of accidents Head-on collision are fewer, pedestrians caught in road crossing are the main victims Accident causes: i) lack of foot path forces people to walk on streets, speeding vehicles engaged in overtaking crush pedestrians ii) lack road markings and signals iii) road-side vegetation blocking views at curves iv) no hard shoulder/ sharp drop on sides v) inefficient drivers and helpers asked to drive vi) sand carrying trucks spill sand and make the road slippery vii) 	<ul style="list-style-type: none"> Incidents of accident increasing. 300 accidents last 3 years and 50 deaths Causes: i) narrow roads ii) increasing no. of vehicles iii) informal 3-wheelers crowding highway iv) presence of bazar on one side high school on the other v) most accidents during day time and on market day (Sunday) vi) untrained drivers and helpers Victims: passengers, drivers and pedestrians Vehicles: bus, trucks, motor-cycles Types of accidents: head-on collision, pedestrians

		uncovered sand trucks create problem for motor- cyclists who are blinded by flying sand viii) unfit vehicles suddenly stopping	
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Post-accident arrangements	<ul style="list-style-type: none"> • Most accident victims are treated in Tangail main hospital where facilities are available. Most local residents have contact info of the hospital • Typically, after accident, driver flees • 10% of accident victims die or are severely injured • Local people extend helping hand • Police confiscate offending vehicle but in 75% of incidents, no police cases are lodged due to hassles. In the remaining 25% cases 	<ul style="list-style-type: none"> • Govt hospital only 4-5 km away, most victims treated • Driver flees • Locals barricade to catch offending vehicle but no violence • Local people assist victims to hospital • 60% of incidents, no case lodged, cases settled through payment • Vehicle cars release car from police by underhand payments • In most cases, no cases lodged for fear of police harassment 	<ul style="list-style-type: none"> • Most victims treated in tangail hospital, adequate treatment • Most people have contact info of hospital • Drivers flees, local people are helpful • In 80% of cases, no case lodged • Police seizes car but owner gets it released through underhand payment • Most victims do not lodge case for fear of police harassment
Steps to reduce accidents	<ul style="list-style-type: none"> • Recently, local admin has i) placed some road signs ii) speed-breakers and iii) trimmed some road-side trees. But these are inadequate to the felt need. Partucularly, in the accident spot of Rabna flour mill, there is traffic point but no signals and traffic police are also not effective. • However, there is publicity regarding these nor are there awareness raising campaigns • There is also no community policing initiatives. However, durug the 2 eids, durga puja and pohelaboishakh, local pourashavaprovde some personnel 	<ul style="list-style-type: none"> • Local admin not pro-active in addressing problem but under public pressure sometimes puts speed breakers or remove them • Community initiatives are few, recently courtesy Walton (a company) road signs and warnings have been put in accident spots • No recent advocacy campaigns by government • TV is not helpful here better option is to produce advocacy materials on CDs and show at bus terminals 	<ul style="list-style-type: none"> • Local admin not pro-active • In some spots, some road-signs but no advocacy programs • No traffic signals • No traffic police despite area being accident-prone

	to help the traffic police.	and edu institutions	
Suggestions	<ul style="list-style-type: none"> • 4 lane needed • Informal 3 –wheelers should be banned from highways • Signs on dangerous curves • Traffic police at intersection where feeder roads meet highway • Slanting trees at curves to be trimmed • Rupali flour mill corner where passengers alight and mount, an over-bridge should be constructed • Traffic week and safe driving demonstrations should be held regularly at bus terminals • Properly licensed drivers to be encouraged and unfit vehicles to be removed 	<ul style="list-style-type: none"> • Over-bridge at the area • Road divider and footpath reform • Zebra crossing and traffic police presence • Informal 3 wheelers and unfit vehicles to be moved to different lanes • Punishment to offenders should be ensured • Police extortion to be stopped • Awareness campaign on traffic rules and regulations • 	<ul style="list-style-type: none"> • Separate lanes for separate vehicle types • Road-widening • Deploy traffic police on hat day • Taratiagovtproy school should have a boundary wall • Mobile use to be banned during driving

FGD at congestion spot at Savar

Participants: 37

Businessman =10, Local notables and others =27 (including city mayor, teachers, journalists, merchants, housewives, mechanics, members of community traffic, ordinary employees, auto bike drivers)

Issue	Businessmen	Housewives and women	Others notables including Journalist	Auto bike drivers	Traffic Officials
Time of most serious traffic congestion	<ul style="list-style-type: none"> • 7-9AM and from 5-8 PM • However on bazar days - Saturday and Tuesday the traffic congestion more or less continues all through the day time • Traffic congestion becomes most 	<ul style="list-style-type: none"> • Traffic congestion mostly takes place between 7-11 AM and between 4-8 PM • The congestion has become almost unavoidable ever since the year 2000 when the garment factories and other business establishment started proliferating 	<ul style="list-style-type: none"> • Between 6-10AM and 7:30-9 PM 	<ul style="list-style-type: none"> • Between 7-9 AM and 5-8 PM 	<ul style="list-style-type: none"> • Between 6-8:30AM slight traffic jam is experienced • However most serious traffic jam is witnessed between 4 -9 PM • The most important cause for traffic congestion is the increase in working

	acute for a period of 15 days during the two Eids and Puja	in the area.			population in the area over the last 15 to 20 years and increased vehicular movement
Recent trends in accident	<ul style="list-style-type: none"> Relocation of illegal shops and vegetable and other venders during the last caretaker government and recently has let to making the traffic congestion more tolerable. 	<ul style="list-style-type: none"> The traffic congestion was a major problem during last 3 years. However the removable of illegal occupants from parts of roads and road sides have mitigated the nature of congestion. Congestion however increases during the morning and in the evening and remains relatively less during the office and factory working hours. The unregulated parking of vehicles, specially rent-a-cars and private cars and competition of passenger vehicles to pickup and drop passengers also cause problem 	<ul style="list-style-type: none"> During the last 3 years the traffic congestion situation remained more or less unchanged. However during the last 3-4 months the situation has improved some what 	<ul style="list-style-type: none"> Compare to the Caretaker period the congestion situation has deteriorated as hawker occupation of footpaths and road sides are obstructing traffic movement Recently the Joint Security Forces eased traffic congestion some what by banning easy bikes but they are again back after the intervention of the local MP. 	<ul style="list-style-type: none"> Removable of illegal occupants from roads and road sides in the recent past eased traffic congestion by almost 25% However, owing to intervention by the local MP that made banning of rickshaws and easy bikes from the highway stretch of the road has made significantly improving the situation difficult

Issue	Businessmen	Housewives and women	Others notables including Journalist	Auto bike drivers	Traffic Officials
Main causes of congestion	<ul style="list-style-type: none"> Unloading of products and merchandize on the busy street by vehicle Pedestrians are not using over bridge Buses and other vehicles are stopping without following any rule at the road side 	<ul style="list-style-type: none"> Illegal parking Pickingup and dropping of passengers by buses, other types of vehicles and easy bikes at on both sides of the over bridge 	<ul style="list-style-type: none"> Vehicles from Dhaka bound for North Bengal and for South West Bengal stop to pickup and drop passengers on both sides of the over bridge at the spot creating 	<ul style="list-style-type: none"> Illegal parking Pickingup and dropping of passengers by buses, other types of vehicles and easy bikes at 	<ul style="list-style-type: none"> Number of vehicles are increasing The buses and other vehicles park them on the street side without following any

	<p>competing with each other to pick and drop passengers.</p> <ul style="list-style-type: none"> • The number different types of vehicles using the road specially easy bikes has increased • The shops and markets do not have parking lots so that vehicles are parked helter-skelter causing problem • The parking lot for rent-a-car at the spot can accommodate only 50 of them. However at any point of time there are about 150 of them most of which are parked wrongly in the road side or the road itself. • Unregulated and increasing number of vehicles of all types enter the spot from the feeder works. 	<p>without following any rule.</p> <ul style="list-style-type: none"> • Illegal parking of private and rent-a-car on the road 	<p>obstructions.</p> <ul style="list-style-type: none"> • Unloading of products and merchandize on the busy street by vehicle • Illegal occupation of road space by hawkers and petty merchants • Pedestrians also saunter on the main highways • Illegal parking of private and rent-a-car on the road 	<p>on both sides of the over bridge without following any rule.</p> <ul style="list-style-type: none"> • Illegal parking of private and rent-a-car on the road 	<p>rule</p> <ul style="list-style-type: none"> • Most of the drivers are not trend • Inadequate parking spaces on the road sides for different types of vehicles and the consequential illegal parking on motorable space
Accident-related	<ul style="list-style-type: none"> • During the recent months number of accidents has decreased • Most accidents take place between 6-7 AM and 8-9 PM • Most accidents take place in the dangerous turning points, bus stand and bazar spot • Garments workers and people coming from the village for the first time unused to crossing roads carefully are the most numerous victims. They also include pedestrians haphazardly crossing roads, passengers and drivers of light vehicles 	<ul style="list-style-type: none"> • Corroborated that during the recent months the number of accidents has decreased • Most accidents take place between 7-10 AM and 4-7 PM • Garment workers and pedestrian are relatively the most numerous victims of accidents. They also include school children office and factory employees 	<ul style="list-style-type: none"> • Stated that during recent times number of accidents has decreased. • Pedestrians and garment workers are mostly the victims of accidents followed by passengers and drivers of vehicles of different types • Stated that buses, trucks and rent-a-cars were the vehicles most involved in accidents 	<ul style="list-style-type: none"> • No specific observation has been made by this group on the accident trends • Garment workers and motor cyclists are the most frequent accident victims followed students and passengers and light vehicles • Bus and trucks are the most frequent 	<ul style="list-style-type: none"> • Same as in the previous column • Bus and truck are involved most frequently are accident followed by cars, micro bus, motor cycles, CNG, easy bike, rickshaw and vans.

	<ul style="list-style-type: none"> • Bus, trucks, minibuses, car, auto bikes and motor cycles are the most numerous involved in accidents 	<ul style="list-style-type: none"> • Local bus, trucks and inter district buses are the main perpetrators of accidents 		involved in accidents followed by micro-bus, bus, cars, easy bikes and rickshaws	
Causes of accidents	<ul style="list-style-type: none"> • Unregulated and haphazard pedestrian crossing of roads • Competition of local and nonstop buses to pickup and drop passengers with the tendency to obstructed and overtake each other • The drivers and helpers also have tendency to speed up and cause accidents as they want to make up the lost time on the road 	<ul style="list-style-type: none"> • Unawareness of pedestrians and a tendency on their part not to follow safe road crossing practices taking adequate causation. • Unregulated picking up and dropping of passengers by vehicles at different points • Unregulated entry of 3 wheelers and easy bikes into main road from the feeder roads. 	<ul style="list-style-type: none"> • Speeding by vehicles • Tendency on the part of vehicles to overtake and block each other while trying to pickup passengers • Tendency on the part passengers to board the vehicles specially buses and step down from them in a high. 	<ul style="list-style-type: none"> • Pedestrian unawareness and their tendency to cross roads haphazardly • Pedestrian haste to board and get down from private passenger vehicle • Bigger covered vans and trucks obstructed vision from smaller vans 	<ul style="list-style-type: none"> • Unawareness of pedestrians and a tendency on their part not to follow safe road crossing practices taking adequate causation. • Competition among drivers of buses and other passenger vehicles to pickup as many passengers as they can and for that purpose block each other, overtake and speed. • Speeding the motor cycles • Vehicles owners arrange for driving licenses for not properly trend drivers and employ them. • Owners have a tendency to deploy unfit vehicles in streets.
Post-accident arrangements	<ul style="list-style-type: none"> • Savar is an industrial hub and densely populated spot. There is a government medical hospital, a medical college and 8 private clinics on two sides of the main 	<ul style="list-style-type: none"> • Same as in previous column 	<ul style="list-style-type: none"> • Local clinics, hospitals and Savar Cantonment medical facilities can be accessed for road accident victims. 	<ul style="list-style-type: none"> • Upazila health complex, Enam Medical College and several private 	<ul style="list-style-type: none"> • Local hospitals, private clinics and Savar Cantonment medical facilities come in handy in providing treatment road

	highway over a stretch of 1.5 k.m. Accidents victims get treatment there. Treatments can also be had for army personnel affected by road accident at Savar Cantonment			clinics in the area can provide emergency assistance and treatment to road accidents in the area.	accident victims. There is also a CRP Center.
Post-accident public reactions, driver behaviour and actions taken by authorities	<ul style="list-style-type: none"> Offending drivers often have the tendency to flee the accident spots to escape prosecution People rush victims to treatment facilities but do not damage vehicles involved in accidents. Later on general public try to extract compensation and treatment cost of victims through contact. 	<ul style="list-style-type: none"> People rush to take accident victims to nearby treatment facilities In case of serious accidents people block the street, seize the offending vehicles and demonstrate to protest against the accidents. 	<ul style="list-style-type: none"> Offending drivers try to flee from the accident spot taking the vehicle General public rush the accident victims to nearby medical facilities for urgent treatment. People try to seize the offending vehicle and extract compensation and cost of treatment for the victim. 	<ul style="list-style-type: none"> The offending drivers try to flee from the accident spot and avoid prosecution If the accident victims are students of Jahangir Nagar University, student from the university become violent, block roads and may even on occasions damage the offending vehicle. 	<ul style="list-style-type: none"> Local public rush the victims to nearest health facilities for treatment. They also inform Police and members of other military and paramilitary forces so that they can come in assistance of the accident victims.
Role of traffic police/Highway Police/Police	<ul style="list-style-type: none"> Traffic police usually guide and direct traffic. However members of bazar committee, vehicles owners' association and the local government authorities also provide extra helping hand for traffic management during pick congestion and on the occasions of the Eids. Traffic police are found discharging duties in the spot but they also extract money from vehicles moving 	<ul style="list-style-type: none"> Traffic police are active in the area and there assisted by vehicle owners' association. Do not know whether offender are prosecuted and punished 	<ul style="list-style-type: none"> Traffic police, personnel provided by vehicle owners' association and local government authorities help manage the traffic. Cases are lodged by police but punishment meted out to offenders are not serious Offending vehicles are seized and taken to the police station 	<ul style="list-style-type: none"> Traffic police presence is there but they remain less active in the afternoon and do not often stay after 10 PM. Big offenders involved in accidents are booked by police. However it is not known whether they are ultimately 	<ul style="list-style-type: none"> Adequate traffic police is deployed in the area who include traffic inspectors (5), sergeants (6), TSI (4), SI(6), ATSI (7), ASI (2) and 51 constables. Traffic Police personnel remain deployed all the time without any gap. In cases of minor accidents no police case is

	<p>through the spot.</p> <ul style="list-style-type: none"> • In case of serious accidents police call ambulances to shift victims to hospitals • Offenders are however seldom prosecuted as they reportedly release the offender drivers and vehicle in exchange of money. 			punished.	<p>lodged but in serious cases of accidents police cases are lodged. In the latter cases it becomes difficult to escape prosecution even by paying bribes.</p>
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Issue	Businessmen	Housewives and women	Others notables including Journalist	Auto bike drivers	Traffic Officials
Suggested steps to reduce accidents	<ul style="list-style-type: none"> • Footpaths should be freed from hawkers • On the two sides of the bazar, two over bridges should be build • Public awareness on the need for being careful in crossing roads should be increased and over bridge for pedestrians should be kept free of hawkers. • Unregulated picking up and dropping of passengers from bus should be checked and they should be obliged to do so only in 	<ul style="list-style-type: none"> • In the main road easy bikes should be banned. • Illegal establishment and shops encroaching on the footpath and road space should be removed. • Parking of vehicles in spaces where such parking is not allowed should be stopped. • The practice of buses picking up and dropping in spots where they are not allowed to do so should be stopped. 	<ul style="list-style-type: none"> • Unloading of merchandize from trucks on main roads should be stopped. • Illegal parkings in spaces where such parkings are not allowed should be stopped. • Hawkers should be removed from footpath and over bridges. • Zebra crossing should be there to facilitate safe road crossing by pedestrians. 	<ul style="list-style-type: none"> • Easy bikes should be banned from main road. • Illegal establishments encroaching on road should be removed and separate vehicle lanes should be arranged for different types of vehicles. • Bus, rickshaw, CNG and auto stand should be well identified for appropriate use to discourage unregulated traffic obstructing vehicle parking 	<ul style="list-style-type: none"> • Footpaths should be cleared of hawkers through political initiative and proactive action • Traffic control should be attempted by paying attention to the suggestions and recommendations of the traffic police personnel made in the light of their practical experience. • Over bridges should be built for safe pedestrian crossing • Barbedware should be erected on road dividers and pedestrian awareness for

	<p>designated spots.</p> <ul style="list-style-type: none"> • There are needs for working traffic signal system, zebra crossings and appropriate road signs • Separate lanes for rickshaws and autos should be arranged • Traffic police not influential people or businessmen in the area should be making the traffic rules and orderly management of traffic 				<p>careful road crossing should be encouraged.</p> <ul style="list-style-type: none"> • There are needs for functioning traffic signal system, appropriate road signs. • Buses picking up and dropping passengers in an unregulated manner wherever they like should be stopped. • Separate lanes for rickshaws and autos should be arrange.
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Community FGD :Uthali Bazar (high risk accident spot)

Location :ShibaloyUpazila, Manikgonj District

Date : 12 February, 2014

Participants: 6 (includes President Local Bazar Committee, Secretary Bazar Committee, 1 Businessman, 1 Member of Community Police, 1 Housewife, 1 student)

Accident-related	Post-accident arrangements	Steps taken to reduce accidents	Suggestions
<ul style="list-style-type: none">• During the last 3 years 12 persons have died in road accidents at this spot of whom was an old person• People meet with accident while crossing roads without taking due care and while boarding or descending from vehicles• Proliferation of Nasiman, Karimans, auto rickshaws and similar other vehicles is a contributing factor to accidents• There is no speed breaker in the bazar area or on the two sides of the bridge in the area and also no traffic signs compounding the situations• However, during the recent months the number of accidents have decreased with the deployment of community police who help the pedestrians to safely cross the road and as a result of growing public awareness about the need for crossing roads carefully.• FGD participants were not aware whether perpetrators of accidents were punished by authorities.	<ul style="list-style-type: none">• Accident victims are usually taken to nearby hospitals speciallyManikgonj district hospital or Dhaka after giving some instant treatment locally.• Most people do not know of emergency telephone numbers to be used increases of accidents.	<ul style="list-style-type: none">• Local authorities have not taken proactive actions. However Road and Highways authorities have placed road signs indicating speed limit and have also erected road dividers at risky and dangerous curves or road turning points.• Uthali Bazar Police Station has employed a community police to help regulate traffic and pedestrians specially school children and elderly persons. The community police is paid with resources collected from shop owners, drivers parking cars etc. The payment varies between five thousand to five thousand five hundred taka.• No proactive advocacy programs has been carried out in the area	<ul style="list-style-type: none">• To reduce accidents unlicensed Nasiman, Karimans, CNG auto rickshaws etc. should be banned• In the bazar areas pocket road should be created• Entrance points of feeder roads to main road should be widened• Speed breakers and traffic signs where needed should be introduce.• Illegal establishments on two sides of the road should be removed• Offending drivers should be meted out exemplary punishment• Suitable advocacy programs should be under taken with due consultations with target population and or other relevant stakeholders.

FGD : Tepra (high risk accident spot)

Location : Shibaloy Upazila, Manikgonj District

Date : 12 February, 2014

Participants: 6 (includes Secretary of Tepra Bazar Committee and Chair of local Community Police, Chairman of a local union Parishad, President of Tepra Bazar Community, 1 local journalist, 1 teacher and 1 community police member)

Accident-related	Post-accident arrangements	Steps taken to reduce accidents	Suggestions
<ul style="list-style-type: none"> Accidents are more frequent during winter : However, it cannot be said with certainty whether accidents take place at any particular time of times during the day. No discernible pattern is visible in this regard. In the last 6 months two major accidents occurred in the area one involving a head on collision between two buses and in the second accident a pick up van carrying merchandise lost control and fell into the road side ditch in the first accident the bus driver died and 25-30 passengers had minor injuries. In the second accident two persons who were in the van died. It was observed that during the last three four years number of accidents in the area has gone down. The structural improvements effected at road turning points and deployment of community police by shop owners have helped a lot in reducing accidents. Vehicles most involved in the accidents in the area are passenger buses. Main accidents involve head on collision between vehicles, cases of accident due to tendency of drivers to overtake, vehicles being hit from other vehicles at the back. Main causes identified for accidents were carelessness of 	<ul style="list-style-type: none"> Accident victims are treated at the upazila hospital in the area. This hospital has however inadequate facilities. Serious accident victims have to be sent to Manikgonj district hospital or medical facilities in Dhaka. Most people at the spot, when asked, replied in the negative about their knowledge about emergency telephone numbers to be used in case of accidents to contact relevant people or treatment faculties. Local people while asked whether offenders involving accidents are punished observed that they had no idea in this regard. They however noted that in cases of serious accidents police cases are lodged 	<ul style="list-style-type: none"> Local informants credited the central government initiative to effect structural improvements in the form road widening, straightening of the highway at a number of places, arranging road markings etc. for reduced road accidents during the last two three years. However, they were not so positive about a pro-active police making any positive contribution in this regard which did very little to implement some actions agreed upon between local public and the police authorities eight years ago to reduce the number of accidents. About a year ago the local Market Traders' association introduced Community Police Services with the permission of the Police Authorities. The association has appointed one community police personnel who presently help pedestrians to cross road. The local informants observe that during the annual Traffic Week Calibration some road safety advocacy programs are carried out in a limited scale. They are however not known for major road 	<ul style="list-style-type: none"> It was observed during the FGD in the area that road safety improvement would call for training of drivers, withdrawal of unfit vehicles from street, deployment of adequate number of traffic police and punishment being meted out to offending drivers involved in accidents. Other suggested remedies were the need for wading in the road, building of an over bridge for pedestrians and removal of unnecessary speed breakers. Public awareness advocacy programs need to be undertaken and wide use of TV and other media for the purpose will be helpful. Such programs should be introduced for people of all

drivers and their disrespect of fundamental safe driving norms, tendency on their part to speed up suddenly, fatigue and sleeplessness, mechanical defects of vehicles.		<p>safety impact.</p> <ul style="list-style-type: none"> • It was observed during the FGD that there is no traffic signal system in the area. 	age groups.
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Situation Reports

Chandra Mor Situation Report

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> • Haphazard pick-up and drop of passengers by north-bengal buses • Haphazard road-crossing • Talking on mobile while crossing road • Haphazard crossing partly dictated by haphazard parking and illegal occupation of roads 	<ul style="list-style-type: none"> • Highway police, Gazipur district police and Kaliakor than police all engaged in traffic management but extracting petty bribes from vehicles • Vehicles paying bribes are allowed longer parking time • Average bribe taken is Tk. 10 • Daily toll of Tk 2 to 3 thousand to local thana depending type of vehicle 	<ul style="list-style-type: none"> • North Bengal bound passengers • Dhaka and Gazipur bound passengers • Vegetable vendors • Small shop-owners and employees • RMG workers 	<ul style="list-style-type: none"> • No traffic signs or signals • No speed-breaker or zebra crossing or road-crossing signs 500 m around the spot on all directions 	<ul style="list-style-type: none"> • Bus • Mini-bus • Truck • Rickshaws • 3-wheelers 	<ul style="list-style-type: none"> • Road condition is good but 2/3rd of road occupied by vendors/shops and illegal parking • Rainy season aggravates the situation 	<ul style="list-style-type: none"> • Police extracting money from passing vehicles and local vendors and shops • Daily toll is deposited in a pan shop and collected by police at the end of day • Community policing by RMG factories

Tangail Situation report

Spot :Tarotia Bazar

Dates and Times of Situation Report

18 February, 2014, 10:35AM

19 February, 2014,

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> • Pedestrians are found to cross busy road without following any rule and this is the same at all spots. According to people interviewed randomly at the spot this is the general practices on most of the days. • Following an accident on 11/02/2014 in which a school girl was killed on public hue and cry the administration has erected a speed breaker at the spot. But since the speed breaker has not been properly painted and indicated by an appropriate road sign it is not visible and of use. • At this spot at around 8-9 AM on the average 14-15 vehicles traverse the highway. 	<ul style="list-style-type: none"> • No traffic police was observed at the spot. • However, in case of accidents the highway police are contacted . 	<ul style="list-style-type: none"> • General public • Industrial workers • Students 	<ul style="list-style-type: none"> • No traffic signs or signals • No speed-breaker or zebra crossing or road-crossing signs 500 m around the spot on all directions 	<ul style="list-style-type: none"> • Bus • Mini-bus • Truck • Rickshaws • 3-wheelers • During the recent years there has been a significant increase in the number of 3 wheelers and easybikes using the highway side by side with other types of vehicles. 	<ul style="list-style-type: none"> • The highway is 2 lanes at the spot in reasonably good condition but it does not have footpaths or safe zebra crossings for pedestrian safety and convenience. • Relative good motorable condition contributes to drivers driving at high speeds. • Frequent propensity to overtake leads to accidents. 	<ul style="list-style-type: none"> • In cases of accident victims with minor injuries get treatment or medicine from local pharmacies. In cases of serious injuries victims are sent to district hospital which 6.5 km. away from the spot. • Average time to call ambulances from hospital is about 20-25 minutes subject to availability and actual time for sending victims to hospital vary depending on traffic congestion. • The offices of political parties in the locality, members of bazaar committees and many others at the spot have the telephone numbers of highway police and other emergency number

Tangail Situation report

Spot : Nagar Jalphal by pass

Dates and Times of Situation Report

18 February, 2014, 10:45AM and 5: 30 PM

19 February, 2014, 8:45 – 9: 05 AM

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> The passengers coming to the spot using easy bikes cross the highway without following any rules and haphazardly and there is no traffic police to guide them. 	<ul style="list-style-type: none"> For the most part of the day there is no traffic police at the spot. However, in case of accidents the highway police are contacted. 	<ul style="list-style-type: none"> General public Passengers to and from 22 districts pass through the bypass and they some of them also board buses near the bypass. 	<ul style="list-style-type: none"> There are road signs indicating turning on both sides of the bypass There is however no speed limit sign There is no traffic signal lights There is no zebra crossing for pedestrians 	<ul style="list-style-type: none"> Bus Mini-bus Truck Rickshaws 3-wheelers During the recent years there has been a significant increase in the number of 3 wheelers and easybikes using the highway side by side with other types of vehicles. These mode of transport is used mostly Tangail town from Dhaka and different upazilas. 	<ul style="list-style-type: none"> The road is sinewy at the spot with many curves raising the risk of accident. Road condition is reasonable but is narrow and inadequate for the increasing number of vehicles passing through the spot. Significantly on both side of the highway there is no spare space and there is a stiff fall in the elevation increasing the risk of vehicles slipping or skidding. There is no speed breaker ahead or after the spot and as such busses and trucks have a tendency to speed. 	<ul style="list-style-type: none"> There is no medical facility in the immediate vicinity of the spot where the accident victims can be treated. The accident victims have to be sent to the district hospital about 4 and half kilometer away from the spot.

Tangail Situation report

Spot :Gharinda Crossing

Dates and Times of Situation Report

18 February, 2014, 4: 30 PM

19 February, 2014, 8: 15 AM

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> Passenger crossing at the spot is unregulated and unguided. 	<ul style="list-style-type: none"> Traffic polices are occasionally deployed at the spot. 	<ul style="list-style-type: none"> General public People going to the rail station near by General public going to the theme park near by Petty businessman going to Tant Pally near by 	<ul style="list-style-type: none"> Courtesy the theme park near by signs have been posted at the spot requesting them to be careful in crossing road. There are speed beakers but they are not well marked There is no zebra crossing makings and there are no traffic signal lights 	<ul style="list-style-type: none"> Mini-bus Truck Rickshaws 3-wheelers During the recent years there has been a significant increase in the number of 3 wheelers. According to a local informant daily about 1500 vehicles mostly 3 wheelers and easy bikes pass through the crossing 	<ul style="list-style-type: none"> There are speed breaker on two extremes of this crossing. However they are not clearly indicated. There is sudden drop in the elevation of the incoming feeder road joining the crossing from the south. This causes accidents as speeding incoming vehicles from the feeder road often meet with collision. On certain occasions such vehicles also face hazards due to need for frequent break failures. 	<ul style="list-style-type: none"> There is no medical facility in the immediate vicinity of the spot where the accident victims can be treated. The accident victims have to be sent to the district headquarter about 3 kilometer away from the spot.

Tangail Situation report

Spot :Ravna bypass intersection

Dates and Times of Situation Report

18 February, 2014, 3: 00 PM

19 February, 2014, 7:45 AM

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> There is no traffic congestion at the spot in the morning however descending passenger buses near Nitol Pilling Station crossing the road haphazardly which pose considerable risk for accident. 	<ul style="list-style-type: none"> According to some informants at the spot traffic police are deployed for brief periods only on special occasion like the two Eids. There is a Highway Police Box at the spot which is supposed to be man all through the day and night. the PPRC team was inform that personnel at the police box usually stay there from 9 AM in the morning till 8 PM at night. There is a vacant police box at the bypass island where on special occasions mobile police team members stay. 	<ul style="list-style-type: none"> In the morning office goers use the spot most. Fish mongers and vegetable traders also pass through and use the spot. General public 	<ul style="list-style-type: none"> There is no traffic signal light at the spot. There are road signs indicating different destinations from the spot There is no speed limit sign. There is a speed breaker which is however not well marked. There are lane dividing arrow marks at spot/intersection. There is triangular island at the spot. 	<ul style="list-style-type: none"> Bus Mini-bus Truck Mini truck 3-wheelers During the recent years easy bikes and CNG autos have increased phenomenally. 	<ul style="list-style-type: none"> Road segment in the eastern part of the bypass is wide but the vehicles using the two CNG filling stations, auto and easy bike stand crowd the spot obstructing the movement of vehicles. The road to the north of the intersection point becomes slightly narrow and road sides are denuded with stiff fall in elevation increasing the risk of accident and accident related fatalities 	<ul style="list-style-type: none"> Accident victims are transported to nearest government hospital which about 4 km. away from the spot Accident victims are usually transported using tempos, CNGs and easy bikes, Most accidents take place due to speeding CNGs which crowd the spot. Haphazard pedestrian movement is also a cause for accident related fatalities. There is no speed breaker on the northern side of the highway police box.

Savar Situation report

Spot : 250 Metre from Savar Bus Stand Over bridge

Dates and Times of Situation Report

12 February, 2014, 12-2: 00 PM

4: 00 - 6.00 PM

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> Most pedestrians were not observed using the over bridge for crossing the road. They were observed crossing the road haphazardly without following any rules regulations. In the period between 12:00 - 2:00 PM only about 20% of the pedestrians use the over bridge between 4:00- 6:00 PM this percentage was about 15% Most traffic Jam accompanied by haphazardly crossing the road without utilizing the over bridge takes place in the evening when industrial workers from the EPZ come out of their work place. Illegal parking, occupation of footpath by venders of products and shops also inhibit easy pedestrian movement and 	<ul style="list-style-type: none"> Between 8:45 AM - 9:30 AM, 12:00 - 2:00 PM and 4:00 PM - 6:00 PM traffic police or normal police presence were observed. They were observed guiding the traffic and helping pedestrians cross the road. The number of such police personnel were usually 2. A guard of the City Center in the vicinity of the spot also helped the police. 	<ul style="list-style-type: none"> From 6 : 30- 8:00 AM garment workers, Dhaka bound employees in different establishments and petty merchants and workers in local bazar. From 12:00 - 2:00 PM mostly business people, hawkers and some students and garment workers. From 4:00- 6:00 PM students, workers and others returning home 	<ul style="list-style-type: none"> No road signs were observed at the spot. 6-7 speed breakers where however seen in the stretch of the road beyond the truck stand. 	<ul style="list-style-type: none"> Bus Mini-bus Truck Mini truck 3-wheelers During the 47 minutes of observation in total 826 vehicles moved through the spot of which 128 were buses, 137 were minibuses, 131 were trucks and covered vans, 165 were microbuses and cars 214 were easy bikes, 11 were double Decker buses and 40 were motor cycles. It was indeed the most numerous category of vehicle 	<ul style="list-style-type: none"> Road condition is good in the 1.25 kilometre stretch from Genda Bazar to City Center. However the stretch of road from the over bridge to City Center is not in a good condition. 6 Feeder roads from the east and 5 from the west join the main road here over a stretch of 1.5 kilometres. Since there is a bazar for perishable goods in the area and an arat or local storage depo the spot and the street is dirty and a significant part of the main highway is occupied by traders and venders of different products. The presence of a auto bike station and a bus stand just in front of the bazar obstructs vehicle and pedestrian movement causing among others traffic jam 	<ul style="list-style-type: none"> Local informants identified unregulated unloading of merchandize from trucks in the spot as a cause for congestion in the area. The fact that these unloaded merchandize are not removed immediately and remain scattered all over the place cause road obstruction and pose risk for accident. Most of the time there is no traffic police. Unregulated picking up and dropping of passengers at different locations in the spot were observed which followed no rules. The entrance to the over bridge is obstructed by

cause congestion.				passing through the spot during the 47 minutes of observation .		hawker presence and petty shops.
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Situation report : Tepra (high risk accident spot)

Location :ShibaloUpazila, Manikgonj District

Dates and Times of Situation Report

11 February, 2014, 10 AM - 3: 30 PM

Road-users and their behavior	Traffic police behavior	Who use the road the most	Traffic signaling arrangement	Types of vehicles	Road condition	Further observations
<ul style="list-style-type: none"> Between 7 and 11 AM mostly students, local businessmen, passengers bound for Aricha and local public cross this spot Between 11 AM and 2 PM road users number decreases somewhat however they increase again between 2 and 5 PM During the observation period pedestrians were seen crossing the road running and without following any rule. Some of them were also found talking on cell phones 	<ul style="list-style-type: none"> No traffic police was observed at the spot during observation period. 	<ul style="list-style-type: none"> Bus, trucks mini buses and lagunas are the most numerous types of vehicles using the spots. According to one informant during the recent months the number of unlicensed Nasiman and Kariman passing through the spot has decreased but CNG auto rickshaws and easy bikes has increased during the recent months Significantly large number of motor cycles passing through the spot and some of them suddenly enters the main road from feeder roads at high speed 	<ul style="list-style-type: none"> There is no functioning traffic signal system at the spot. There are however road sign indicating speed limit one hundred meter from the east and another sign two hundred meter to the east indicating that the spot ahead is a spot with high risk of accident. According to one informant a speed breaker one hundred meter to the east was removed before the last Eid but the sign showing the speed breaker is still there. There are no zebra pedestrian crossings for passenger 	<ul style="list-style-type: none"> Bus Mini-bus Truck Mini truck 3-wheelers During the recent years easy bikes and CNG autos have increased phenomenally. 	<ul style="list-style-type: none"> The road condition is relatively good on both sides of the Tepra intersection 	<ul style="list-style-type: none"> There is no emergency treatment facility for accident victims near the spot and such victims has to be transported to Manikgonj district head quarters hospital Local people do not know the emergency telephone numbers they can use in case of serious accidents Availability of ambulances for accident victim transportation on demand is difficult and rare.

Situation report : Uthali Bazar (high risk accident spot)

Location :ShibaloyUpazila, Manikgonj District

Dates and Times of Situation Report

11 February, 2014, 10 AM - 3: 30 PM

Road-users and their behavior	Traffic police behavior	Which type of vehicles use the road most	Road condition	Traffic signaling arrangement	Further observations
<ul style="list-style-type: none"> • Pedestrians were found crossing the spot, which is an intersection of 4 roads without following any pattern and during school time the students were found crossing the streets taking considerable risk 	<ul style="list-style-type: none"> • No traffic police was observed at the spot during observation period. • However one member of community police was found at the spot. 	<ul style="list-style-type: none"> • Bus, trucks mini buses are the most numerous types of vehicles using the spots. • On the average 3 to 4 vehicles were found crossing the spot every minute • A large number of Nasimans, Karimans and auto rickshaws were found crossing the spot although they had no number plates. 	<ul style="list-style-type: none"> • No observation was recorded on the physical condition of the road • However it was noted that there are numerous shops on all sides of the spot and there is no space between the shops and the main road. • There is no vacant space for incoming passengers to get down from their vehicles and they necessarily get down on the main road • The two feeder roads to the main road enter the main road without crossing any waiting space and since these feeder roads climb uphill the incoming drivers cannot see what is ahead till at the last movement necessitating incoming vehicles to apply brakes suddenly with risk for accidents. 	<ul style="list-style-type: none"> • There is no functioning traffic signal system at the spot. • There is however a road sign indicating speed limit and warning that there is risk of accident if the speed limit is not respected. 	<ul style="list-style-type: none"> • Road accident victims are transported to government hospital which is half a kilometer away from the spot. • General public do not know the emergency telephone numbers to be used in case of necessity. • Ambulances are rarely available in case of accidents.

Annex 5
Inventory of Road Safety Related Literature

Sl. No.	Article	Author	No of Page
1.	Road Safety Progress in Bangladesh	Md. Sabuj Uddin Khan	57
2.	Road accident trends in Bangladesh: A comprehensive study	Mohammad Shah Alam S.M. Sohel Mahmud Md. ShamsulHoque	10
3.	An Analysis of 100 Road Traffic Accident Victims	*Islam RN,1 Monsur MA,2 Asaduzzaman M3	4
4.	Enhancing Urban Safety and Security Global Report on Human Settlements 2007	UnitedNationsHumanSettlementsProgramme	16
5.	Road traffic accidents; An observational and analytical study exploring the hidden truths in Pakistan and South East-Asian Countries	Tabish Hussain1, Li Yu Shu1, Tumenjavkhlan Sosorburam2, A.Seid Adji3, Ali Hassan Khan4, Asim Farooq Raja5	6
6.	Road safety research in Bangladesh: constraints and requirements	S.M. Sohel Mahmud Md. ShamsulHoque	10
7.	Reporting and recording of road traffic accidents in Bangladesh	H.M. Ahsan, M.A. Raihan, M.S. Rahman & N.H. Arefin	7
8.	Study of Heavy Vehicles' Driver Behavior In Road Accidents of Bangladesh	Syed Rakib Uddin,, Dr. Md. ShamsulHoque,	6
9.	Road Traffic Injuries: an Emerging Problem in Bangladesh	SK Biswas	1
10.	Road Traffic Accidents by 'Nasimon' and 'Karimon'-A Study in Faridpur Medical College Hospital.	ASMJ Chowdhury1, MS Alam2, SK Biswas3, RK Saha4, AR Mandol5, MM Rahman6, MA Khair7	4
11.	Road Accidents: Contemporary Scenario and Policy Issues in Bangladesh	NailaSharmeen. Md. Rabiul Islam	11
12.	Country Paper on Road Safety Bangladesh	KhandakerFatema Begum	17
13.	Traffic Safety in Dhaka City: Key Issues and Countermeasures	Hasib Mohammed Ahsan and Mohammed MazharulHoque	13
14.	Road Safety Education of Children	Asian Development Bank	10
15.	Comparative Accident Study on Some Selected National Highways of Bangladesh	1. Md. Mizanur Rahman, 2. Md. Shafikul Ahsan & 3. Md. Hadiuzzaman	8
16.	Let the Roads be of Peace	We Demand Safe Road	2
17.	Road Traffic Injuries in Bangladesh: a neglected epidemic	AKM Fazlur Rahman PhD	34
18.	Roads in Bangladesh The Next Millennium	Government of the People's Republic of Bangladesh Ministry of Communications Roads and Railways Division	24
19.	Report on Road Accident of Bangladesh	http://www.assignmentpoint.com/science/medical/report-on-road-accident-of-bangladeshpart-2.html	15
20.	Improving Highway Safety In Bangladesh: Road Improvement And the potential Application of iRAP	Prof. Dr. Md. MazharulHoque, Greg Smith, DewanZayid Hossain, S.M. SohelMohmud	34
21.	Road Traffic Accident: A Leading Cause of The Global Burden of Public Health Injuries And Fatalities	TaheraAnjuman, ShahnewazHasanat-E-Rabbi, Chowdhury KawsarArefin Siddiqui and Md. MazharulHoque	6
22.	Promoting vulnerable road users safety towards safe and equitable communities in Bangladesh	M Hoque and S M Sohel Mahmud	2

23.	Community participation in traffic law enforcement	Global Road safety Partnership	6
24.	Make Road Safe A New Priority for Sustainable Development	Commission for Global Road Safety	70
25.	The Accident Research Institute (ARI)	The basic information abstracted for MAAP database for a period of 1998-2011 tabulated in the following 42 tables.	38
26.	National Road Safety Strategic Action Plan 2011-2013	Government of The People's Republic of Bangladesh Ministry of Communications Bangladesh Road Transport Authority National Road Safety Strategic Action Plan, 2011-2013 National Road Safety Council	27
27.	The Road to Road Safety: Issues and Initiatives in Bangladesh	Md. MazharulHoque	13
28.	Road Safety In Bangladesh: Key Issues And Countermeasures	Dr. Hasib Mohammed Ahsan	5
29.	Centre for The Rehabilitation of The Paralyzed (CRP) Advocacy and Networking Department Report on the CRP-Road Safety Week, 2012 (16th -22nd October-2012)	Md. Mizanur Rahman Kiron Advocacy & Networking Officer	5
30.	Road Accidents in Bangladesh	K. M. Maniruzzaman and RaktimMitra	3
31.	Road Safety in Bangladesh and some Recent Advances	Professor Dr. Md. MazharulHoque	70
32.	Road Safety Engineering Challenges in Bangladesh	Dr. Md. MazharulHoque S. M. Sohel Mahmud	10
33.	Who is to blame for road accidents?	Md Abdul Alim	3
34.	Road User Cost Study For LGED Roads	Local Government Engineering Department (LGED)	63
35.	A Simple Framework for Prioritizing Road Safety Fund for Different Geographical Regions in Bangladesh	Sudipta Sarkar Richard Tay	15
36.	Status of Road Safety in Asia Regional Expert Group Meeting on Implementation of Decade of Action for Road Safety, 2011-2020	Economic and Social Commission for Asia and The Pacific	11
37.	The Status Paper on Road Safety Problems in Bangladesh	The Bangladesh Country Paper	8
38.	Road Accident and Safety Study in Sylhet Region of Bangladesh	B. K. Banik, M. A. I. Chowdhury*, E. Hossain, B. Mojumdar	13

39.	Children's Traffic Education in Bangladesh, Final Report	Institutional Development Component	70
40.	National Road Traffic Accident Report 2007	Bangladesh Road Transport Authority	61
41.	Perceptions of Bus-drivers about Road Traffic Accidents and Their Driving Practices in Dhaka City, Bangladesh	Ahmadul Hasan Khan	1
42.	PPRC Material Head		1
43.	Global status report on road safety 2013 Supporting a decade of action	World Health organization	318
44.	Welcome to The Presentation on Road Safety	KhandakerFatema Begum	24

45.	Rhd Road User Cost Annual Report For 1999-2000	Government of the People's Republic of Bangladesh Ministry of Communications Roads and Highways Department	44
46.	RTA Annual Report	Md. EhsanulHoque, Chairman, BRTA. Mr. Tapan Kumar Sarker, Director (Enforcement), BRTA. Md. Syed Muhammad MujibulHoque, Deputy Director (Enforcement), BRTA. A.B.M. Abubaker Siddique, Accident Data Analyst, BRTA.	57
47.	Road Safety	BRAC	3
48.	Global Status Report on Road Safety, 2013 Supporting a decade of action	WHO	318

Annex 6
Driver Survey Questionnaire



Power and Participation Research Centre(PPRC)
House # 77/A, Road#12/A, Dhanmondi, Dhaka-1209

Profile of Drivers-2013

(To be used only for research work)

Questionnaire

Module-1: Drivers' Profile – Preliminary Information

Name Age : years

Education ☐ 1 Illiterate ☐ 2 Can read and write ☐ 3 Primary ☐ 4 Secondary/equivalent ☐ 5 SSC/equivalent
☐ 6 HSC/equivalent ☐ 7 Bachelor/equivalent

1. Type of vehicle driver by you : Code (may be more than one)

Code on vehicle driver: 1= Rented car, 2= Rented microbus, 3= Minibus, 4= Standard bus, 5= Truck, 6=Covered van

2. Driving experience? ----- Years

3. Type of license? (Code)

Type of license code: 1=For light vehicle (Private car/Jeep, Pickup), 2=For medium sized vehicle (Microbus/Minibus), 3=For heavy duty vehicles (Bus, Truck/Lorry etc.), 4=Does not have authorized license

4. Experience of driving car before obtaining license? Experience ☐ 1 Did not have experience ☐ 2

If answer to above query is yes for Experience how long? ----- Months

5. Route in which you presently drive vehicle? (Code)

Code for routes in which vehicles are driven: 1=Dhaka, South Bangladesh Faridpur/Barisal route, 2=Dhaka-Jessore/Sathkhira route, 3=Dhaka, North Bangladesh Bogra-Rangpur/Dinajpur route, 4=Dhaka-Pabna/Rajshahi /ChapiNababgonj route, 5=Dhaka Comilla Chittagong/Cox Bazar route, 6=Dhaka-Sylhet route, 7=Dhaka-Tangail/Jamalpur route, 8=Dhaka-Mymensing Route, 9=Dhaka –Aricha route, 10=Dhaka-Mawa route, 11=All over Bangladesh, 12=Dhaka-Narshindi route

6. Relation with owner of vehicle? (Code)

Relation with owner of vehicle (Code) :- 1=Close relative, 2=Distant relative, 3=Person from own locality, 4=Not related but common acquaintance, 5=Not related to the owner of the vehicle but in his/her good book, 6=Owner of vehicle himself, 7=Others (mention)

Name of Field Investigator ----- Date -----
 --

Module 2: Household profile and socio-economic details

2.1 Provide information on your HH members and earning HH members using following matrix:

Serial No.	Age (Years)	No. of HH members			No. of earning member		
		Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8
1	1-15						
2	16-30						
3	31- 45						
4	46+						
Total							

2.2 Provide information on economic and social condition of HH using the following matrix :

Land owned by self		Nature of residence in Dhaka (Code)	If you live in rented accommodation monthly rent	Average income of HH (Taka)	Are you or your HH indebted Yes=1, No=2	If answer is yes amount of loan
Homestead land (decimal)	Cultivable land (decimal)					
1	2	3	4	5	6	7

Nature of residence in Dhaka (Code-3): 1=Own residence, 2=Rental house, 3=Mess, 4=Vehicle/Bus/Car, 5=Others (Garage/Hotel etc.)

2.3 Share additional detailed information on your monthly income using the following matrix:

Monthly salary (Taka)	Earning from each trip per monthly income (Taka)	Payment made as commission basis per month (Taka)	Minimum monthly guaranteed salary (Taka)	Monthly meal/food allowance (Taka)	Extra monthly income over monthly salary (Taka)	Total monthly income (Taka)

2.4 Self-assessment of economic status of HH (Code)

Self-assessment code : 1=Always deficit, 2=Some times deficit, 3=Breakeven income, 4=Surplus

2.5 Membership status of specific labour/transport unions? Yes ☐ 1 No ☐ 2

If the answer to above question is yes, provide information using the following matrix

Sl: No.:	Name of institution/organization/trade union	Membership type 1=General/ordinary member, 2=Member of executive committee	Perception on benefit from membership unions/professional bodies? (Code)
1			
2			
3			

Perception on benefit from membership's unions/professional bodies (Code) :

1=Pecuniary benefit, 2=Enhanced eligibility for access to credit, 3=Get resources for treatment, 4=Help for children's education, 5=Health insurance related help, 6=Protection from police harassment, 7=Help in case of litigation, 8=Help in getting driving license, 9=Help in getting jobs, 10=In case of accidental death dispatch of dead body for burial of death body, 11=Help to children marriage, 12=Others (specify)

Module- 3 : Training and driving license related

3.1 How did you learn driving? ☐ 1 Formally ☐ 2 Through informal training ☐ 3 Both

3.2 Give information of training using following matrix

Sl. No.	Personal/Training Institution related information	Duration of training	Expenses out aided of training	Usefulness of training and evaluation of training (code)
1	Friends/Relatives			
2	Teacher/Ustad			
3	Government Institution			
4	Private Institution			
5	NGO			
6	Others			

Usefulness training and evaluation of training (code) :

1=Can drive vehicles well, 2=Can drive vehicles moderately well, 3=Training was not usefulls

3.3 Following training how much did you come to know about traffic rules/signal

- ☐ 1 Have learned fully
- ☐ 2 Have moderately learned about driving
- ☐ 3 Have not been able to learn much

3.4: Provide license related information using the following matrix

Sl. No.	Type of license	Participated in driving test before getting license Yes=1, No=2	Who helped to get license (Code)	Location from where license was obtained 1=Dhaka 2=District level office	Did you face harassment in getting license Yes=1, No=2	If response is yes to previous question describe the nature of harassment (code)
1	Light vehicle					
2	Medium vehicle					
3	Heavy vehicle					

Mode of getting license code: 1=Through own initiative, 2=Through acquaintance, 3=Through middleman, 4=Through BRTA person, 5=Through driving training institution, 6=Through labour/federations, 7=Through transport company

Harassment faced in obtaining license code: 1=Had to pay money over and above due fees, 2=Had to go to licensingoffice more than once, 3=Had to take help of middleman, 4=The middleman gave take license, 5=Others (mention)

Module- 4 : Condition of vehicle and working condition

4.1 What is the road worthiness of the vehicle that you usually drive? (Code)

- ☐ 1 Very good ☐ 2 Moderately good ☐ 3 Not so good/often faces problem

4.2 The vehicle driven by you is it regularly serviced? (Code)

☐ 1 Regularly serviced ☐ 2 Serviced irregularly ☐ 3 Do not know

4.3 In a day how many hours do you drive ----- hours

4.4 In a week how many days do you drive ----- days

4.5 Do you use cell/mobile phone while driving? Yes ☐ 1 No ☐ 2

If the response to above question is yes does it interfere with your driving? Yes ☐ 1 No ☐ 2

Module- 5 : Driving history and instances of accidents

5.1 Over the last five years were you involved in any accident? Yes ☐ 1 No ☐ 2

If the response to above question is yes give the following information

Date	Number of accidents	Type of car (Code)	Nature of accident (Code)	Estimate of damage (Code)	What was the penalty for being a party to the accident (Code) can be more than one	Subsequent to accident did you get assistance from the owner/association to which you belong (Code) can be more than one	Cause of accident
1	2	3	4	5	6	7	8
During last one year	1						
	2						
During last four years prior to the last one year	1						
	2						
	3						

Code for vehicle code (Column-3): 1=Tempo/CNG/Easy Bike/Legona, 2=Private Car/Jeep, 3=Microbus, 4=Minibus/Mini Truck, 5=Bus/Long haul Bus, 6=Truck, 7=Covered Van, 8=Tank/Lorry

Code for nature of accident code (Column-4): 1=Headon accident, 2=Hit from behind, 3=Skidded from the road, 4=Padertrises/Cattleheads killed/injured, 5=Others (desribe)

Extent of damage during accident code (Column-5): 1=Damage to vehicle was minor with no loss o life involved, 2=Moderately severe damage to vehicle with no loss of life, 3=Severe casulties and loss of life without any damage to the vehicle, 4=Severe damage (damage to vehicle and casulties/loss of life, 5=No damage to vehicle 6=Others (describe)

Penalty for involvement in accident code (Column-6): 1=Faced court case, 2=Had to pay fine. 3=Had to serve jail sentence, 4=Driving license was seized/impounded, 5=Faced no penalty, 6=Tamporarily releaved of duty, 7=Others (describe)

Assistance received following accident code (Column-7): 1=Full cost of treatment, 2=Part payment for treatment, 3=Full family sustainance allowance during treatment, 4=Partial family sustainance allowance during treatment, 5=Legal assistance, 6=Cost of litigation/fine, 7=Reinstatement to job, 8=Don't no problem so doesn't no help, 9=Others (describe)

5.2 Were you injured in any accident during the last five years? Yes ☐ 1 No ☐ 2

If the ensure to above question is yes please elaborate on the nature of accident:-

- 1.
- 2.
- 3.

Module- 6 : Health and Insurance related matters

6.1 At the moment do you have any ear and eye problem?

Yes No

If the answer to above question is yes please give details :

6.2 Do you have any health insurance policy?

Yes No

If the answer to above question is yes please give following information:

A. Name of insurance policy -----

B. Annual premium amount in taka -----

C. Give your views about the usefulness of the insurance scheme -----

Module- 7 : Perception on specific concerns/issues

7.1 Please share your views on the following road safety related issues:

Sl. No.	What are your opinion about the main causes behind road accidents?	What steps need to be taken to improve road safety and reduce incidence of road accident?
1		
2		
3		
4		
5		
6		
7		

7.2 Problems relating to driving licenses and likely solutions

Sl. No.	What main problems are encountered in processing application for driving licenses?	What steps do you suggest to overcome these problems?
1		
2		
3		
4		

5		
6		

7.3 Information on recent trends in improvement or deterioration in road safety conditions

Sl. No.	In your opinion what road safety improvements have taken place recently	In your opinion what has been the nature and trend of road safety deterioration during recent months
1		
2		
3		
4		
5		

7.4 Share details on insecurity in roads experienced by you recently?

Degree/extent of insecurity experienced (Code)	Cause(S)	Suggested remedies

Degree of insecurity experienced (Code) 1=Do not feel secure at all, 2=Feel moderately secure, 3=Feel secure

7.5 How aware are you about advocacy programs relating to road safety and security as they are carried out through TV ads, traffic week related programmes, arranging special supplements in news papers etc.?

☐ 1 Fully aware ☐ 2 Moderately aware ☐ 3 Not aware at all

7.6 What advocacy measures and steps would you suggest to make traffic week related programmes more effective would you suggest?

1.-----

2.-----

3.-----

7.7 Please suggest measures that according to you can make driving lessons/instructions more effective?

1.-----

2.-----

3.-----