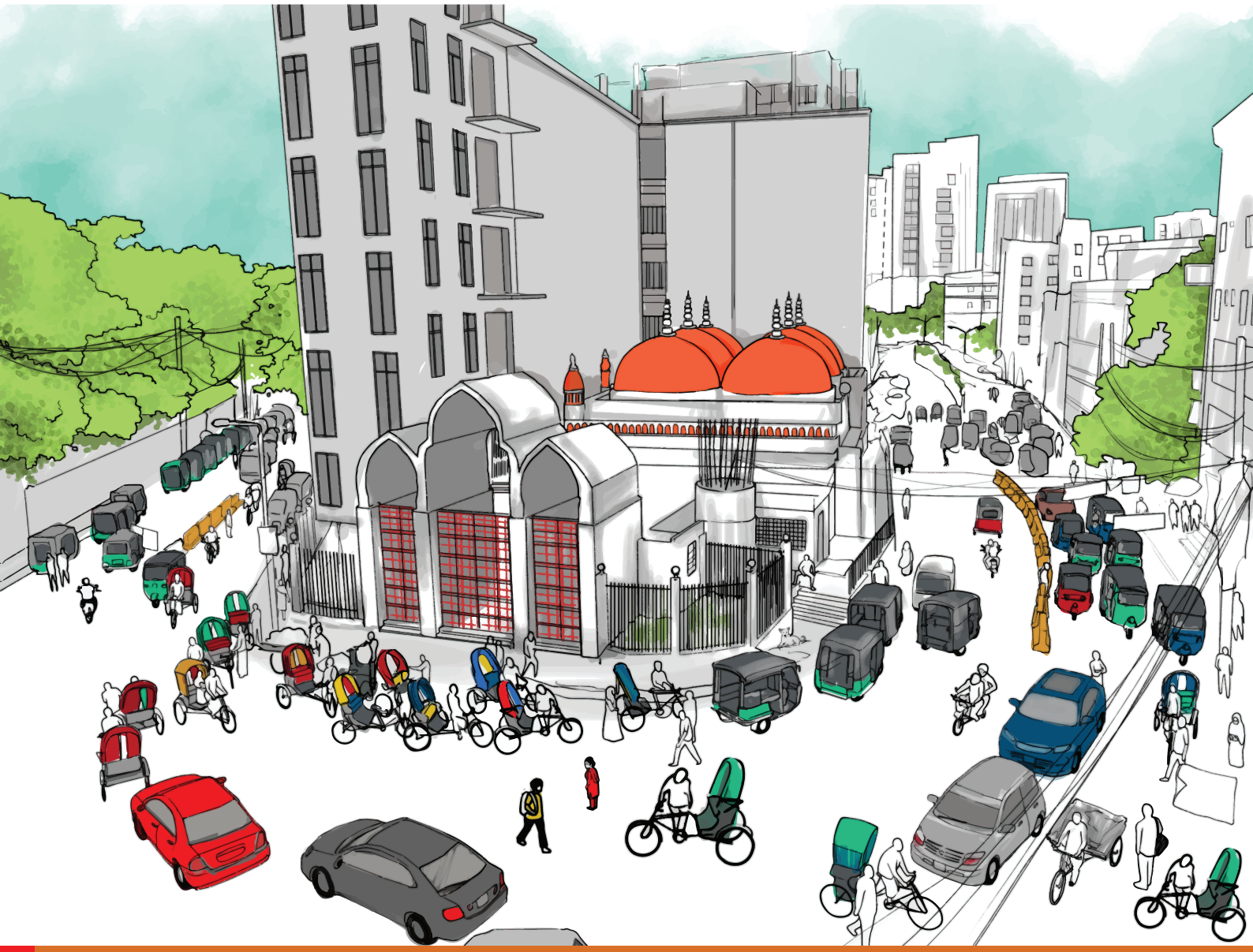


CHATTOGRAM CITY ROAD SAFETY REPORT

2020 - 2022

September 2023

This report is dedicated to the memory of all the freedom fighters and martyrs of the Liberation War who gave their all for this country. We also extend our dedication to those affected by road crashes, including the families of road crash victims and to the individuals working diligently to ensure road safety day and night. Furthermore, we want to express our deepest gratitude to the professionals and organizations involved in this cause including the Police, Engineers, and other related professionals whose efforts make our lives safer on the roads. Your commitment and efforts inspire us as we work together to improve road safety and support those in need.

Credits

(in no particular order)

Analysis and Report Preparation

Kazi Md Shifun Newaz, surveillance coordinator, BIGRS–Chattogram
Mirick Paala, senior technical advisor (Asia Region), Vital Strategies
Grant Ennis, deputy director–road safety, Vital Strategies
Dr. Sara Whitehead, lead surveillance, Road Safety, Vital Strategies

Editors

Mr. Krishna Pada Roy, BPM (Bar), PPM (Bar), police commissioner, Chattogram Metropolitan Police
Mr Sheikh Mohammed Tauhidul Islam, chief executive officer, Chattogram City Corporation
Suganthi Saravanan, program officer–road safety, Vital Strategies.
Kanchana Ganeish, program associate–road safety, Vital Strategies
Quazi Helal Uddin, enforcement coordinator, BIGRS–Chattogram
Mahamudul Hasan, communication officer, BIGRS–Chattogram
Mahiat Hasna Shawrna, transport coordinator, BIGRS–Chattogram
Labib Tazone Utshab, initiative coordinator, BIGRS–Chattogram

Data Support

Mr. A S M Mahatab Uddin-PPM (Sheba), additional police commissioner (Crime & Ops), Chattogram Metropolitan Police
Quazi Helal Uddin, enforcement coordinator, BIGRS–Chattogram
Officer-in-Charge of all Police Stations, Chattogram Metropolitan Police
Anwar Hossain, data encoder
Ashikur Rahman, data encoder

Special Thanks

Md Abdul Wadud, initiative coordinator, BIGRS
Mohammad Shahin-ul-Islam Chowdhury, superintendent engineer, Chattogram City Corporation

Published by

Chattogram Metropolitan Police, Chattogram

Supported by

Chattogram City Corporation
The Bloomberg Philanthropies Initiative for Global Road Safety

Published

September 2023

Table of contents

LIST OF FIGURES

Page no.

LIST OF TABLES

LIST OF MAPS

PREFACE

Md. Rezaul Karim Chowdhury

Hon'ble Mayor
Chattogram City Corporation

The Chattogram City Corporation (CCC) has partnered with the Bloomberg Philanthropies Initiative for Global Road Safety Initiatives (BIGRS) to save lives and reduce road crashes. Vital Strategies, the initiative's partner, collaborated with the Chattogram Metropolitan Police (CMP) to prepare a Road Safety report based on the city's road crash data. It's a significant milestone as this is the first road safety report for any city in Bangladesh. I extend my gratitude to everyone involved in this initiative, including Bloomberg Philanthropies, Vital Strategies, and other global partners, for their support in making our city safer for its citizens. I also express my appreciation to the CMP for their valuable assistance in this endeavor.

I believe that this report will provide valuable insights on the current road safety situation in Chattogram. CCC will coordinate with the CMP, Chattogram Development Authority, Bangladesh Road Transport Authority, and other stakeholders to adopt a multi-sectoral approach to reduce deaths and injuries resulting from road crashes. CCC will also work with BIGRS partners on various road safety issues, including redesigning intersections, developing pedestrian facilities, and raising awareness about road crash risk factors to enhance safety.

Chattogram as the port city, serves as the economic hub of Bangladesh, handling a significant portion of the country's imports and exports. It also hosts numerous industrial establishments, which contribute to the high volume of daily traffic in the city.

Over the past few years, Chattogram has witnessed various infrastructure developments, including the construction of several flyovers and overpasses. The inauguration of the country's first underwater tunnel is eagerly awaited. Additionally, work on the Elevated Expressway is in progress, and the construction of the Metrorail is set to commence soon. These developments promise to bring substantial ease to the movement of city dwellers.

However, it's essential to emphasize that as we continue to build new roads and infrastructure, ensuring road safety must remain a top priority. Road crashes are a significant issue in Chattogram, similar to other cities. The local government is actively pursuing initiatives to reduce the number of road crashes and casualties in the city. I am confident that our collective efforts will lead to safer roads, ultimately preventing further loss of lives on the streets of Chattogram.

Md. Rezaul Karim Chowdhury

PREFACE

Krishna Pada Roy, BPM (Bar), PPM (Bar)

Police Commissioner
Chattogram Metropolitan Police

Chattogram, the port city, is the second largest city in Bangladesh, in terms of area, population and economic activities. Chattogram Metropolitan Police (CMP) is committed to ensure the protection of life and property of the citizens of this city. Our vision is to make the city safe for all and our mission is to work for a better and safer Chattogram. As part of our commitment, ensuring road safety and discipline are also the major concern for us.

According to the Bangladesh Road Transport Authority (BRTA), a total of 165,833 motorized vehicles had been registered between 2017 and 2022. This figure indicates the rapid growth of motorized vehicles and at the same time,we lack proper estimation for non-motorized vehicles which occupy the major part of the roads. Furthermore, motorized and non-motorized vehicles ply on the same road, making traffic management more challenging.

Moreover, construction works are going on different roads and the role of the traffic police has becomes more crucial in such circumstances. Along with traffic management, police also enforce road transport laws,such as speed, helmet & seatbelt wearing, driving license and vehicle fitness checking etc. in order to prevent fatalities from road crashes.

I extend my heartfelt gratitude to Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) for partnering with Chattogram City Corporation and Chattogram Metropolitan Police (CMP) to ensure road safety and crash data surveillance system.In addition, Vital Strategies has collaborated with CMP to collect road crash data and prepare this status report. I compliment this collaboration as the report will be helpful for the CCC and CMP to trace the hazardous road locations and corridors and take measures to prevent crashes. CMP will also be happy to collaborate for strengthening the data system to make such reports more precise and useful.

It's a matter of regret that we have lost many of our police officers in road crashes. Everyone is valuable to his family and we don't want to lose anyone else in road crashes. I believe, the facts and figures of this report will support us in understanding the root cause of crashes and lead us towards an evidence-based solution.

Krishna Pada Roy, BPM (Bar), PPM (Bar)

PREFACE

Sheikh Mohammed Touhidul Islam
Chief Executive Officer
Chattogram City Corporation

Road crashes are a leading cause of fatalities worldwide, and unfortunately, a significant proportion of these tragic incidents occur in lower and middle-income countries like Bangladesh. It's important to note that road crashes are largely preventable through proven and data-driven measures.

Chattogram City Corporation (CCC) has recently formed a partnership with the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) to address the issue of injuries and fatalities resulting from road crashes in our city. Under this initiative, Chattogram Metropolitan Police (CMP) and Vital Strategies collaborated to compile a comprehensive road safety report based on crash data. I would like to extend my heartfelt congratulations to them for this significant achievement.

Data plays a pivotal role in shaping effective policies and decisions. In essence, having access to accurate data enables us to make informed and rational choices. In this context, the road safety report will enable us to pinpoint the necessary safety measures that CCC needs to implement to enhance road safety. We will closely examine the identified high-risk areas outlined in the report and develop a comprehensive solution package encompassing engineering, education, communication, and enforcement strategies. These measures will be put into action as swiftly as possible. Furthermore, the report will prove invaluable to enforcement agencies in their efforts to take preemptive actions in these areas, including monitoring reckless driving, promoting helmet and seatbelt usage, and more.

I want to express my sincere gratitude to CMP for their generous cooperation and unwavering support. It's worth noting that sometimes, citizens hesitate to report crashes to the police, leading to underreporting, which is a challenge we must address. To tackle this issue, CCC can collaborate with healthcare facilities alongside CMP to document all crashes that occur within the city. I have full confidence that CMP will continue their invaluable support towards CCC and BIGRS's mission to save lives from road crashes.

I firmly believe that a coordinated effort involving various stakeholders, including those in engineering, enforcement, and the media, is essential to ensuring road safety. All stakeholders must work collaboratively to safeguard road users of all ages.

Sheikh Mohammed Touhidul Islam

ACKNOWLEDGEMENTS

Chattogram City is one of 28 global cities that are committed to reducing road crash fatalities and serious injuries under the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS). The BIGRS, Chattogram City Corporation (CCC), and the Chattogram Metropolitan Police (CMP) have been working together since 2022 to improve road safety in Chattogram City. One area of this collaboration focuses on collecting, analysing, and using road crash injury and fatality data. The successful completion of this report is a result of active collaboration among the CMP, CCC, and the BIGRS team.

Noteworthy contributions were rendered by Police Commissioner Mr. Krishna Pada Roy, BPM (Bar), PPM (Bar), CMP, along with Additional Police Commissioner (Crime & Ops) Mr. A S M Mahatab Uddin, PPM (Sheba) and Additional Police Commissioner (Traffic) Mr. Abdul Mannan Miah, BPM and Mr. Faisal Mahmud, PPM, former Additional Police Commissioner (Traffic), CMP. We are also thankful to Md Akramul Hasan and Md. Zahangir, Additional Deputy Police Commissioner of Chattogram Metropolitan Police for their continuous monitoring and support.

Mr. Sheikh Mohammed Tauhidul Islam, chief executive officer; Rafiqul Islam, Chief Engineer; Munirul Huda, Additional chief Engineer and Mohammad Shahin-ul-Islam Chowdhury, superintendent engineer, of Chattogram City Corporation, monitored and supported the data collection process.

Deepest gratitude and appreciation to Professor Dr Satya Prasad Majumder, Vice Chancellor (VC), Professor Dr. Abdul Jabbar Khan, Pro-Vice Chancellor (Pro-VC), and Professor Dr Mizanur Rahman, Director of Directorate of Students' Welfare (DSW) at Bangladesh University of Engineering and Technology (BUET). The unwavering support of their technical expertise and profound insights have been instrumental throughout this study. Additionally, the Accident Research Institute (ARI) at BUET also provided invaluable assistance of this study.

The crash data collection management, data cleaning, analysis and report preparation were done by Kazi Md Shifun Newaz, surveillance coordinator, BIGRS, Chattogram with direct support and guidance from Mirick Paala, senior technical advisor, Asia region, and Grant Ennis, deputy director, road safety, of Vital Strategies.

This collaborative endeavour benefitted from the guidance and support of Quazi Helal Uddin, Md. Abdul Wadud, Suganthi Saravanan, Mahiat Hasna Shawrna, Labib Tazone Utshab and Mahamudul Hasan of BIGRS team. The data encoders, Mr Anwar Hossain and Mr. Ashik, contributed enormously to the process. The team is also grateful to the officers in charge of all the police stations who extended their assistance throughout the initiative. Grant Ennis and Dr. Sara Whitehead lent their expertise in the meticulous review of the report. The team sincerely thanks the Bloomberg Philanthropies Initiative for Global Road Safety for its support, which made this report possible.

ABBREVIATIONS

ARF	Accident Report Form
ARI	Accident Research Institute
BIGRS	Bloomberg Philanthropies Initiative for Global Road Safety
BPM	Bangladesh Police Medal
BRTA	Bangladesh Road Transport Authority
BUET	Bangladesh University of Engineering and Technology
CCC	Chattogram City Corporation
CDA	Chattogram Development Authority
CDMS	Crime Data Management System
CEO	Chief Executive Officer
CMP	Chattogram Metropolitan Police
FIR	First Information Report
GD	General Diary
GIS	Geographic Information System
HQ	Headquarters
HRC	Hazardous Road Corridor
HRL	High-risk Location
KM	Kilometre
NMV	Non-Motorized Vehicle
OC	Officer in Charge
PPM	President Police Medal
QGIS	Quantum Geographic Information System
WHO	World Health Organization

EXECUTIVE SUMMARY

Every year, more than 1.35 million people are killed by road crashes globally. Of these, 93% of the deaths occur in low-and middle-income countries.[1] According to the World Health Organization (WHO), Bangladesh suffers from more than 24,954 deaths per year, or 15.3 deaths per 100,000 population.[2]

Evidence-based road safety interventions are thus becoming more critical and urgent throughout Bangladesh and in key cities like Chattogram. This report provides an overview of road crash fatalities and injuries in Chattogram for the period of 2020 to 2022. The report is primarily based on data from the Chattogram Metropolitan Police (CMP).

Based on the data, fatalities in road crashes increased by almost 38% in 2022 compared to 2020. However, fatalities decreased from 2021 to 2022, which could indicate data quality issues. Of all road user groups, pedestrians suffered the most from fatal crashes, comprising 56% of all deaths. Vulnerable road users, which include pedestrians, cyclists, and motorcyclists, made up 89% of all fatalities, warranting more road safety interventions for these groups. Men accounted for 81% of total deaths, with men aged 20 to 54 years making up the highest number of fatalities. Men, especially those 35 to 39 years old, constituted the most motorcyclist deaths.

Hit-and-run driving is a common issue in Bangladesh. This data revealed that 33 percent of crashes in Chattogram city involved hit-and-run cases.

The number of crashes, injuries, and fatalities rose sharply in 2022 during the holy month of May due to increased movement surrounding Eid-Ul-Fitr. The peak periods of fatal crashes occurred during the hours of 16:00–24:00 on weekdays and 16:00–20:00 on weekdays.

After conducting an in-depth spatial study on fatal crashes, 10 locations were identified as high-risk, with Tiger Pass Intersection, Peari Kutir, Khejur Tola (Outer Ring Road), Oxygen Intersection and GEC intersection found to be the most dangerous. The study also identified the 10 highest-risk road corridors. AG road starting from Markazul Ulum Jame Mosque and ending in Bahaddarhat proved to be the most dangerous junction in the city. CDA Avenue and Chattogram–Cox Bazar Road were also particularly dangerous from 2020 to 2022.

[1] *World Health Organization. 2018. Global Status Report on Road Safety 2018.*

[2] *World Health Organization. 2018. Global Status Report on Road Safety 2018.*

INTRODUCTION

Every year, road crashes claim a significant number of lives and cause severe injuries to thousands. More than **1.35 million** people die each year due to road crashes, making it one of the leading causes of death globally.[3] Moreover, more than half of these deaths are among vulnerable road users — motorcyclists, pedestrians, and cyclists.[4] Far from being mere numbers, these data represent lives lost that could have been prevented through effective and evidence-based road safety measures. This is why the government of Chattogram, together with the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS), have committed to reducing road crash fatalities and serious injuries in the city. Key to this reduction is enhancing data collection and road traffic injury surveillance. This report is developed by the joint effort of the Chattogram City Corporation (CCC), the Chattogram Metropolitan Police (CMP), and the BIGRS team.

Chattogram, the commercial capital of Bangladesh, has seen a rapid rise in personal car ownership[5] in recent years together with an increase in population, resulting in increased exposure and risk on the road network. As a significant centre of commerce and trade, Chattogram's roadways serve as arteries of economic activity, but they also pose considerable risks to road users. With the growing number of vehicles and commuters, road safety has become one of the major concerns for authorities and citizens of this port city. This report is an important step towards understanding and addressing the challenges faced in advancing road safety in the city.

More than 1.35 million people die each year due to road crashes

It aims to present the road crash situation in Chattogram from 2020 to 2022, providing data and insights into the cause of crash fatalities, describing trends and patterns, and highlighting key road-safety issues and the demographics of those mostly affected.

The findings provided in this report cover a range of statistics and data sets, including data on fatal crashes, grievous injury crashes, motorcyclist and pedestrian crashes, hit-and-run fatality rates, among other key variables. These data will enable all road safety stakeholders, including government and advocates, to design and implement effective and evidence-based measures.

[3] WHO (World Health Organization). 2018. Global Status Report on Road Safety 2018.
[4] World Health Organization. (2021, June 21). Road Traffic Injuries Fact Sheets.
[5] Bangladesh Road Transport Authority, Number of Registered Motor Vehicles in Bangladesh (Yearwise), 2022.

METHODOLOGY

Reliable and accurate data is essential to an effective and evidence-based approach to road safety. In Chattogram and throughout Bangladesh, the Bangladesh Police have the mandate to collect, manage, and store crash data to support the government in improving road safety. The process below enumerates the activities taken in collaboration with the Bangladesh Police to facilitate collection and compilation of the data presented in this report.

1. DATA SOURCE:

The primary source of this report's data is crash information collected by the Bangladesh Police from 2020 to 2022. These data — mainly collected through First Information Reports (FIRs) — provide details on road crash incidents, the vehicles and persons involved, and the cause and result of these crashes. These reports are stored and managed by the CMP in each of the police stations throughout the city.

Following the occurrence of a road crash incident, the CMP responds to the crash scene and completes a set of forms, including a post-mortem report, complainant form, and a registrar book, followed by the First Information Report (FIR), which is the same document used in reporting criminal activities and which follows the same data collection protocol. Any individual who witnessed or was directly involved in the crash can provide input to the FIR. The completed FIR is then entered into the Crime Data Management System and stored in the respective police station.

After the filing of an FIR, a more thorough investigation follows, including analysis of the crash's causal factors, extent of injuries sustained, activities of the parties involved, and other salient factors. Vehicular conditions and related details are also collected.

Following this process, a supplementary form — referred to as the Accident Report Form (ARF) — is completed to archive the comprehensive details of the incident. Recently Bangladesh Police has introduced an online version of the ARF, which is similar to the MAAP5 software, for further analysis. Chattogram Metropolitan Police also follow the protocol of crash data collection and entry.

The overall crash data collection process is shown below:

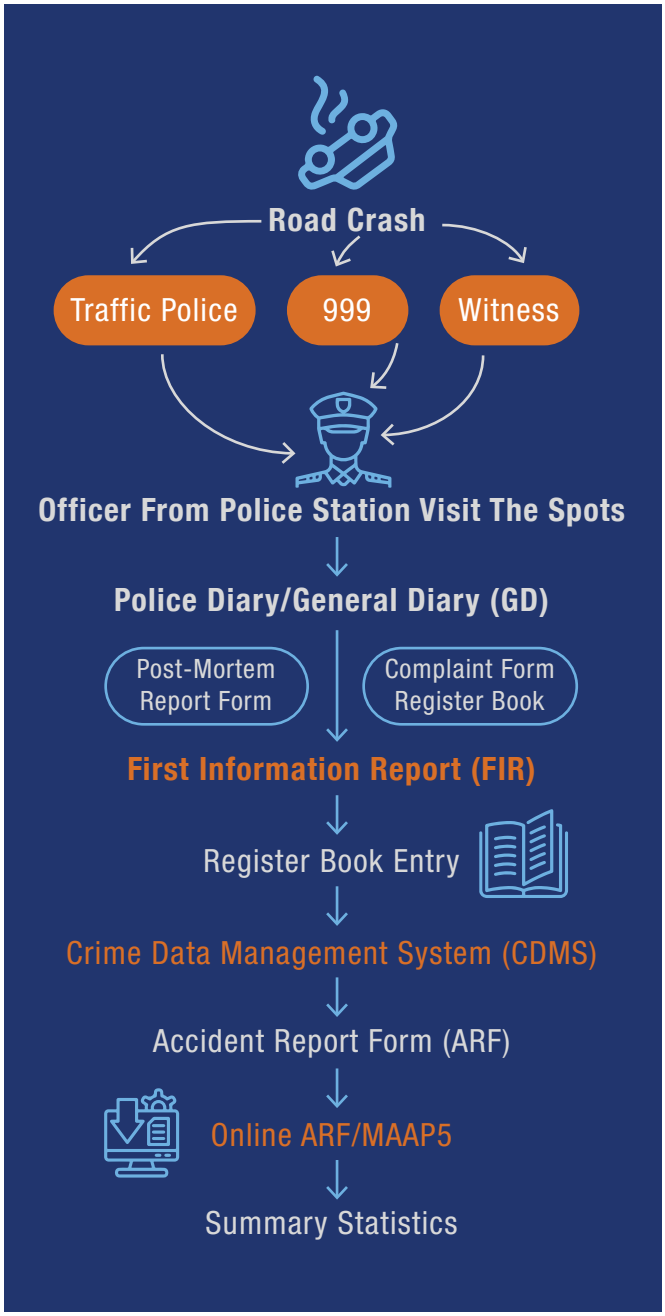


Figure 1: Methodology of crash data collection by Police

2. DATA COLLECTION AND ANALYSIS:

Data was compiled from each of Chattogram's 16 police stations (also called thana). In collaboration with the CMP and with the officer in charge in each police station, the data team visited all the police stations to collect crash data in the city. Two designated individuals (data encoders) were trained to gather data from each station, prepare ARFs, and enter data into a database called Epi Info. The data collection process involved recording data in ARFs based on the registrar book, FIRs, and the police's General Diary. The road users were classified into distinct categories: pedestrians, motorcyclists, three-wheeler vehicle occupants, car passengers, and bicycle riders. Key variables followed international best practice on definitions. Following data collection, the ARFs were digitised in Epi Info, which allowed individual records to be exported as Excel sheets and shapefiles. The exported files were then used to conduct analysis, generate tables, charts, and graphs, and create maps and visualisations, such as a map of high-risk locations. A flowchart of the methodology is presented below:

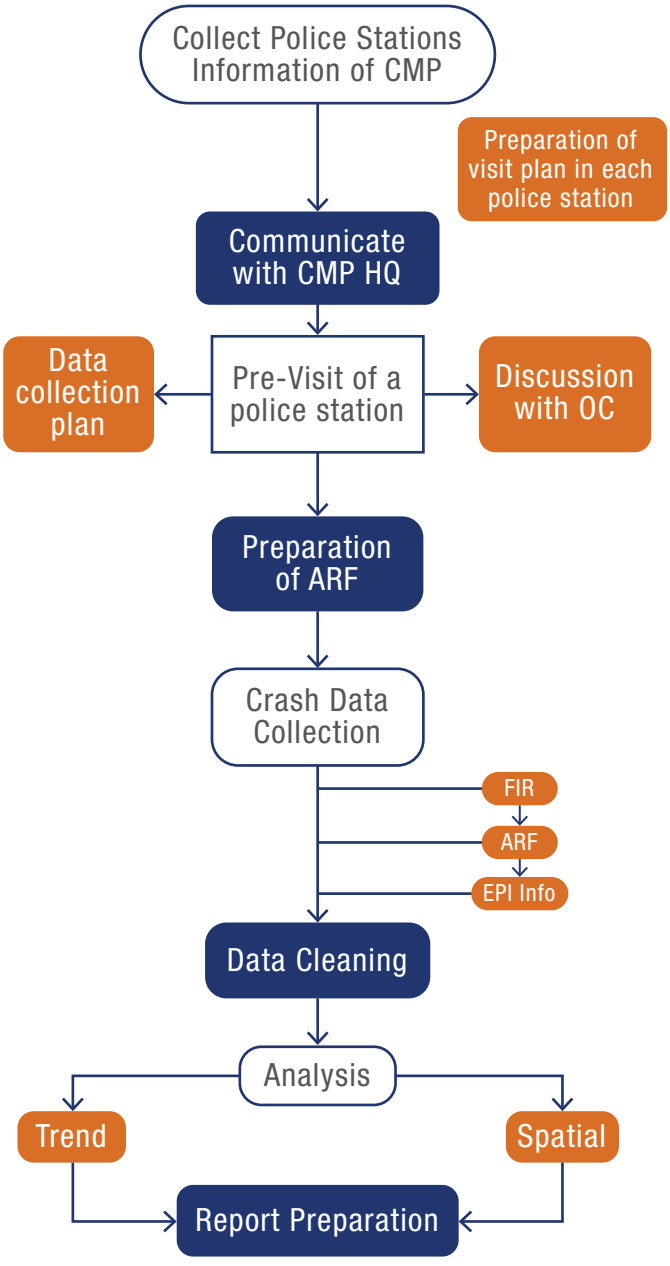


Figure 2: Process of crash data collection and analysis for study

The CMP follows a set protocol following a crash. Usually, witnesses, relatives, and sometimes the traffic police are the ones who notify the crime police when an incident happens. The crime police visits the crash scene, secures the site, coordinates emergency response, and sends the victims to the hospital. At the site, the crime police collect all data through their police diary. At the station, the crime police then fills out the complainant and victim reports based on inputs from the complainant. The officer in charge (OC) reads the complainant form together with the complainant, and then the OC signs the document. The FIR will then be drafted based on the complainant form. Finally, the investigating officer is expected to fill out the ARF once the FIR is completed.

3. LIMITATIONS:

Not all crash events are reported by the public to police, and police only complete documentation for cases proceeding to prosecution. This results in significant underreporting that needs to be addressed through data improvement programs. Lack of standardised definitions, coding, and data collection methods for variables required the team to review all available documentation regarding a certain crash record. Accuracy of crash location documentation is also lacking, which necessitated the team to approximate crash locations based on provided descriptions. Information concerning weather conditions, road geometry, speed, helmet and seat belt usage, as well as potential alcohol involvement, is absent. It is observed that standardised crash documentation forms (ARF) are not universally used in most police precincts. The data provided in this report are based on initial police reports. These reports primarily adhere to legal requirements and, as a result, do not always include all the details required for road safety. Certain details not captured in initial reports might surface in later reports compiled by police.

4. REPORT PREPARATION:

All attribute data of fatal crashes for the years 2020 to 2022 have been analysed and illustrated in charts, maps, and tables. A spatial database was also prepared by adding georeferencing attributes (latitude and longitude) to all crashes and analysed through the Quantum Geographic Information System (QGIS). Various maps were produced to identify crash-prone locations and corridors. Everything is reported and presented in this publication for further use.

Mr. Krishna Pada Roy, BPM (Bar), PPM (Bar), the honourable police commissioner of the Chattogram Metropolitan Police (CMP) provided extended support and insights throughout the study, and during the data collection process.

Additional Police Commissioner (Crime & Ops) Mr. A S M Mahatab Uddin-PPM (Sheba) and former Additional Police Commissioner (Traffic) Mr. Faisal Mahmud-PPM and Additional Commissioner (Traffic) Mr. Abdul MannanMiah-BPM, provided integral support to the BIGRS-Chattogram team. Mr. Sheikh Mohammed Tauhidul Islam, chief executive officer, and Mr. Mohammad Shahin-ul-Islam Chowdhury, superintendent engineer, both of Chattogram City Corporation, monitored and supported the data collection process.

Crash data collection management, data cleaning, analysis and report preparation activities were led by Kazi Md Shifun Newaz, surveillance coordinator, BIGRS Chattogram, with direct support and guidance from Mirick Paala, senior technical advisor, Asia region, and Grant Ennis, deputy director (Asia), road safety, both of Vital Strategies, as well as the government stakeholders of Chattogram. This collaborative endeavour benefitted from the guidance and support of BIGRS team members Quazi Helal Uddin, Md. Abdul Wadud, Suganthi Saravanan, Mahiat Hasna Shawrna, Labib Tazone Utshab and Mahamudul Hasan. Mr Anower Hossain and Mr. Ashik, data encoders, contributed enormously to crash data collection. Officers in charge of the police stations extended their assistance throughout the initiative. Dr. Sara Whitehead and Grant Ennis lent their expertise to the meticulous review of the report.

ROAD SAFETY SITUATION

The road safety situation of the Chattogram Metropolitan Area was analysed using data on crash fatalities and was illustrated through graphs, tables, and maps, covering various road safety indicators. The report covers the whole of the metropolitan area and covers three years of data, from 2020 to 2022. The Chattogram Metropolitan area contains 16 police stations. All data from those police stations was collected and analysed to understand the areawide safety situation.

1. TRENDS IN ROAD CRASHES AND FATALITIES IN CHATTOGRAM METROPOLITAN AREA

The trend in fatal crashes and deaths saw an increase from 2020 to 2021, then a small decrease in 2022. Given known underreporting, this small variation from 2021 to 2022 should not be interpreted as a decisive decline. The lower figures for 2020 may be attributable to pandemic lockdowns and travel restrictions, which led to a decrease in kilometres travelled per person [6].

The trend in fatal crashes and deaths saw an increase from 2020 to 2021

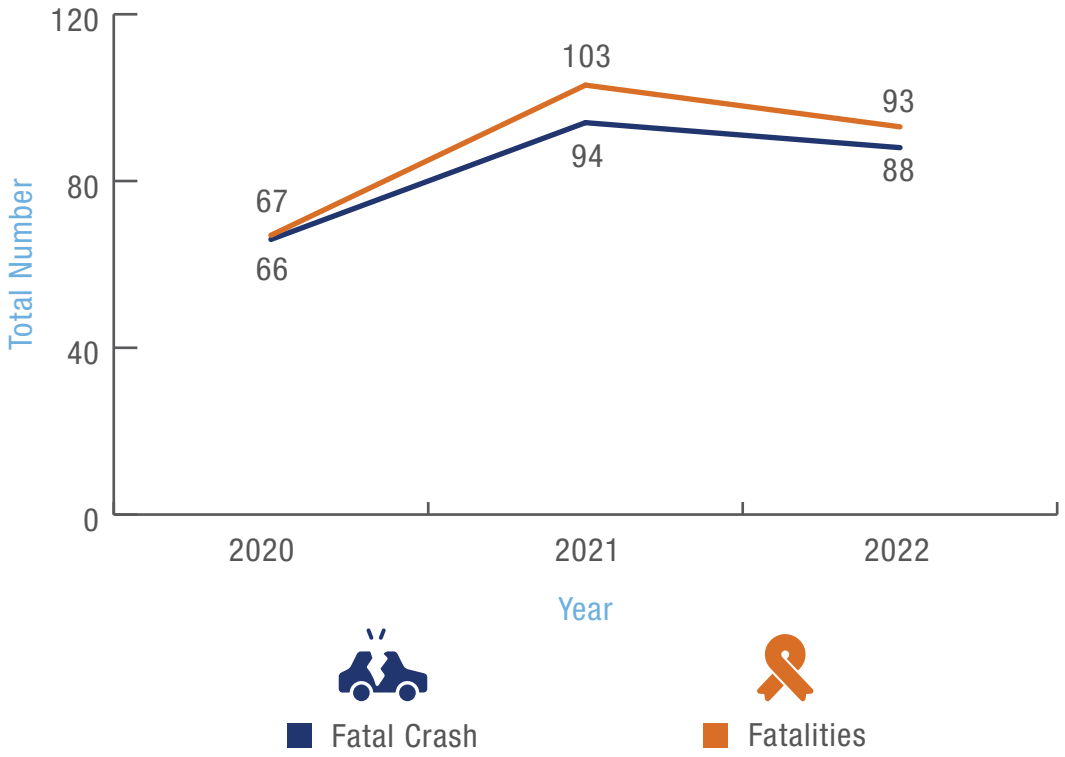


Figure 3: Trends of road crash and fatalities

[6] *Stein, Emma. New AAA study reveals how driving changed during COVID-19 pandemic. July 15, 2021*

2. REPORTED FATAL CRASHES AND DEATHS IN ALL POLICE STATIONS

There are 16 police stations (Thana) in Chattogram Metropolitan Police area covering the whole city. All the police stations collect crash data through FIRs, the CDMS, and ARFs. Table 1 and Figure 4 show the number of all fatal crashes and fatalities in the 16 police stations of the Chattogram Metropolitan Area. Bayezid Bostami had the highest total in both categories; Chawk Bazar had the lowest. The five police stations with the lowest crash numbers in three years were Chawk Bazar, Sadarghat, Panchlaish, Doublemooring, Khulsi.

Sl	Police Station	Fatal Crash	Fatalities
1	Bayazid Bostami	35	35
2	Bakolia	25	28
3	Bandar	25	26
4	Chandgaon	22	22
5	Kotwali	20	21
6	Patenga	20	20
7	Akbar Shah	17	18
8	Pahartali	15	18
9	Karnophuli	13	16
10	EPZ	12	14
11	Halishahar	12	12
12	Khulshi	9	10
13	Doublemooring	8	8
14	Panchlaish	6	6
15	Sadarghat	5	5
16	Chawk Bazar	4	4
	Total	248	263

Table 1: Fatal crash and fatalities in all police stations

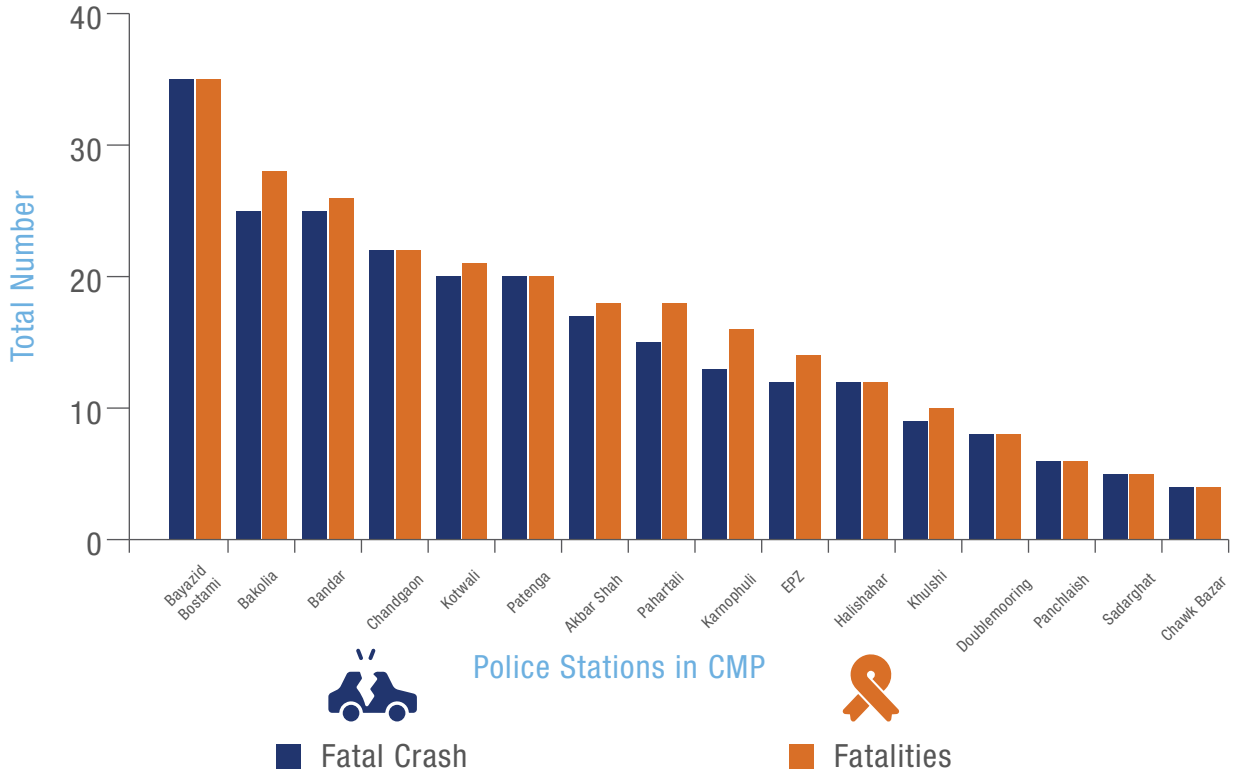


Figure 4: Fatal crash and fatalities in all police stations

3. FATALITY RATE PER 100,000 POPULATION

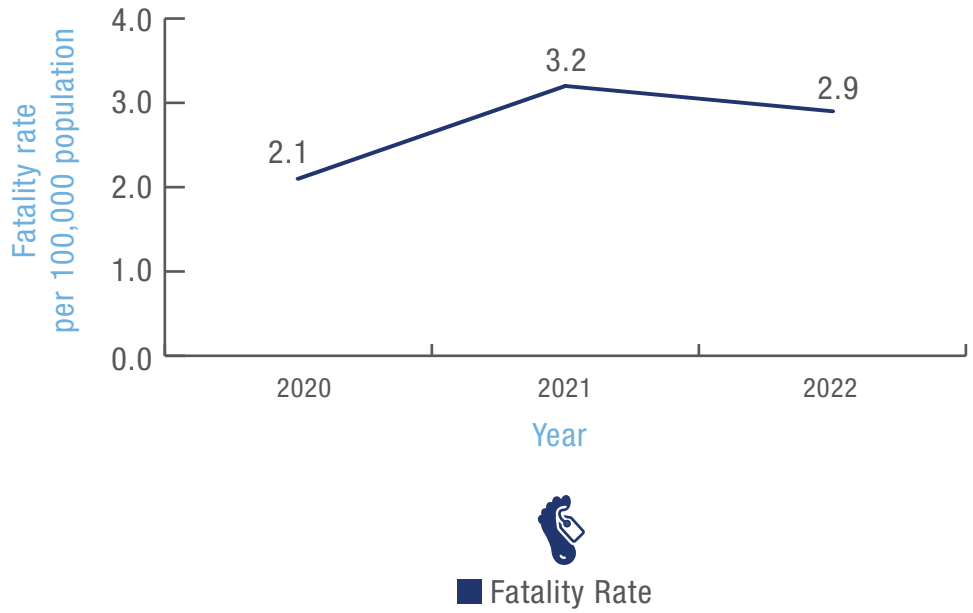


Figure 5: Fatality Rate per 100,000 population

Figure 5 indicates, fatality rates in 2020 were 2.1 per 100,000 population before reaching a peak of 3.2 in 2021. The rate declined to 2.9 in 2022. Similar to the fatality numbers, this decrease in fatality rates warrants further investigation, especially on data quality. From 2020 to 2022, the rate has increased 38% in Chattogram. The population of Chattogram was extracted from the and population and housing census-2022.[7]

From 2020 to 2022, the rate has increased 38% in Chattogram

[7] *https://sid.portal.gov.bd/sites/default/files/files/sid.portal.gov.bd/publications/01ad1ffe_cfef_4811_af97_594b6c64d7c3/PHC_Preliminary_Report_(English)_August_2022.pdf*

4. ROAD CRASH DEATHS BY ROAD USER TYPE, 2020-2022

Pedestrians were the largest group at risk, and pedestrian deaths increased each year from 2020 to 2022. For all other road users, except pedestrian fatalities, the number of deaths increased from 2020 to 2021, followed by a decrease the following year.

Pedestrian deaths increased each year from 2020 to 2022

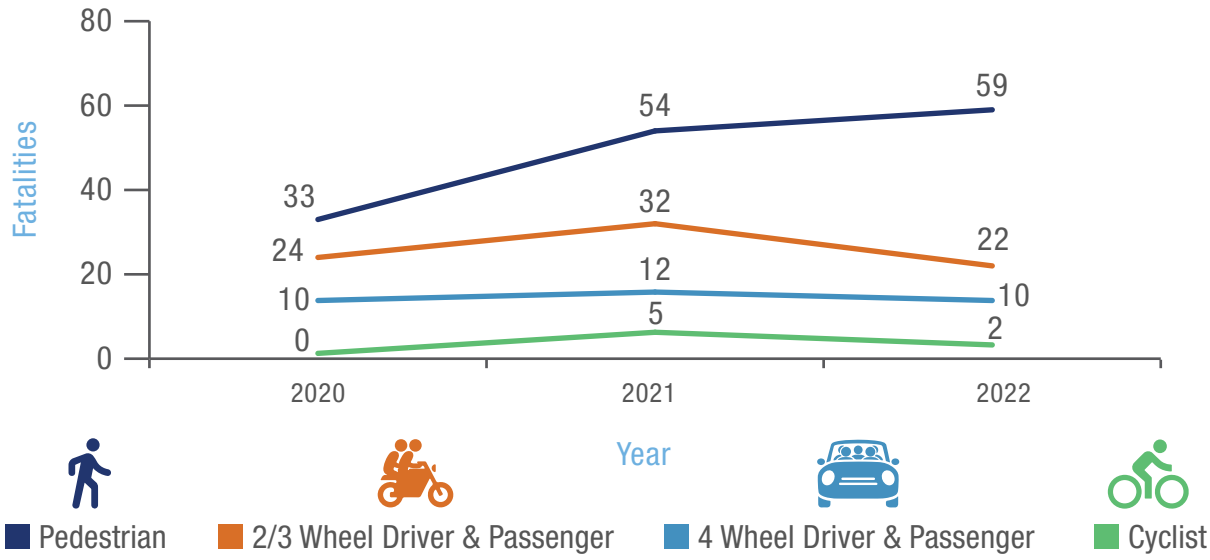


Figure 6: Road crash deaths by road user type, 2020–2022

5. DEATHS BY ROAD USER TYPE, 2020-2022

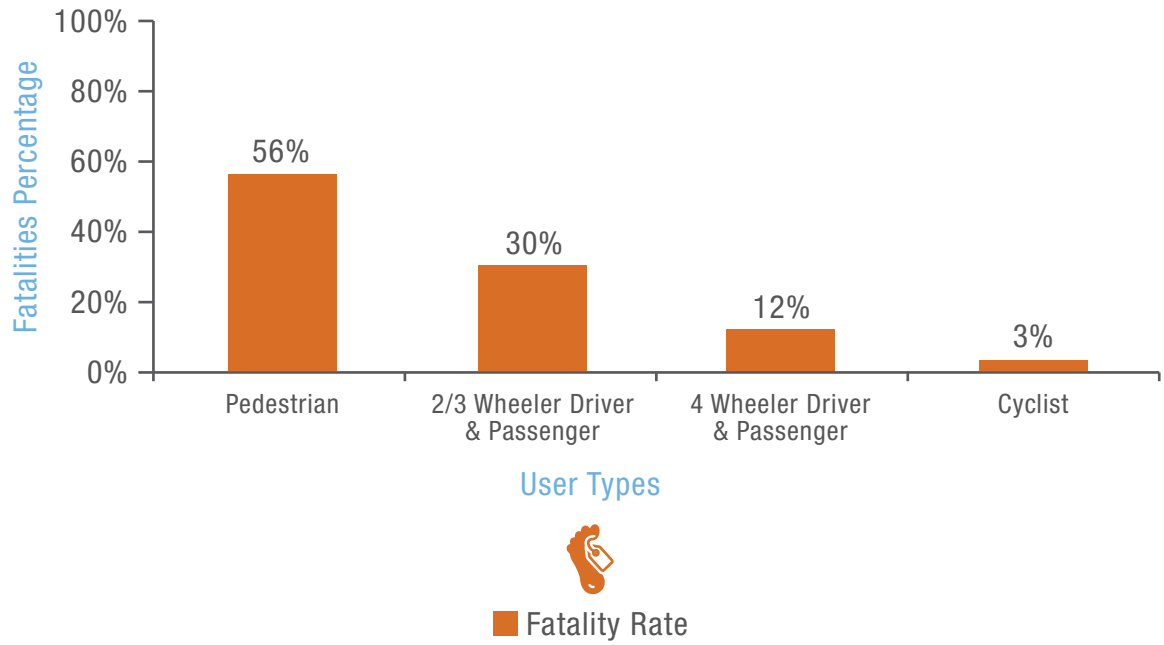


Figure 7: Deaths by road user type, 2020-2022

Figure 7 shows the distribution of deaths by type of road user. Pedestrians account for the majority (56%) of the total deaths. Two- and three-wheeler drivers and passengers account for 30%. Vulnerable road users total 89%, warranting more road safety interventions for these groups.

Pedestrian account for the majority (56%) of the total deaths

6. FATALITIES BY GENDER:

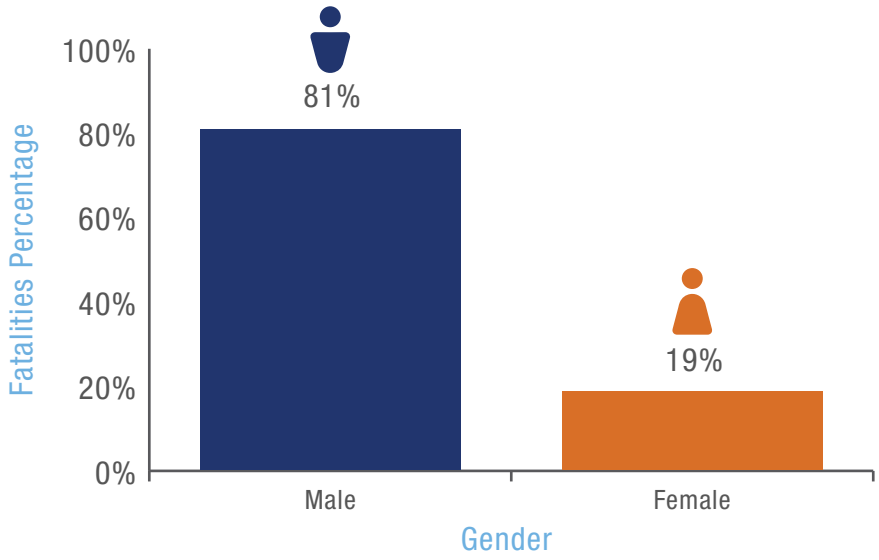


Figure 8: Fatalities by Gender

Figure 8 shows that men accounted for 81% of all road crash fatalities in the year 2020-2022.

Men accounted for 81% of all road crash fatalities

Technical Note:
There was no mention of 1 deceased person's gender

7. DEATHS BY AGE GROUP AND GENDER

Total road fatalities were analysed by age group and gender and are presented in Figures 9 to 10. Figure 9 shows that fatalities are highest among young males between ages 20 to 54.

Fatalities are highest among young males between ages 20 to 54

There are spikes in the 35-to-39 and 45-to-49 age groups, though a comparative decline in the 40-to-44 age group. Female deaths are lower overall compared to male deaths but are highest in the 35-to-39 and 55-to-59 age groups.

Female deaths are highest in the 35 to 39 and 55 to 59 age groups

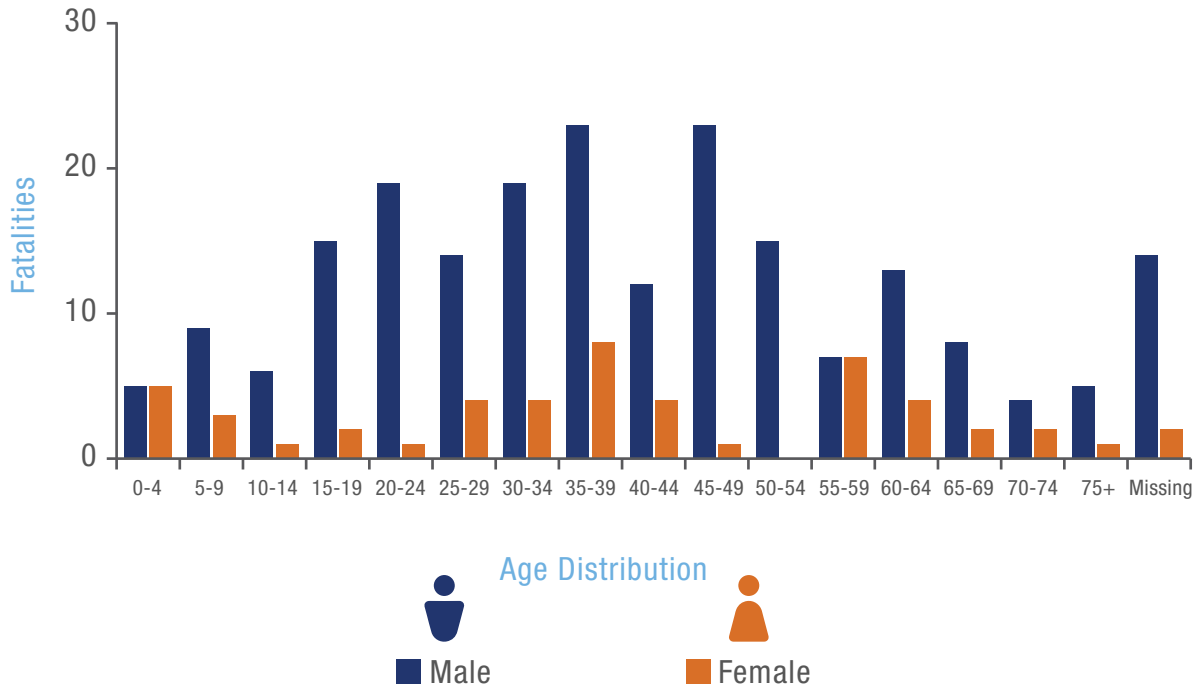


Figure 9: Deaths by age group and gender

8. MOTORCYCLE DEATHS BY AGE GROUP

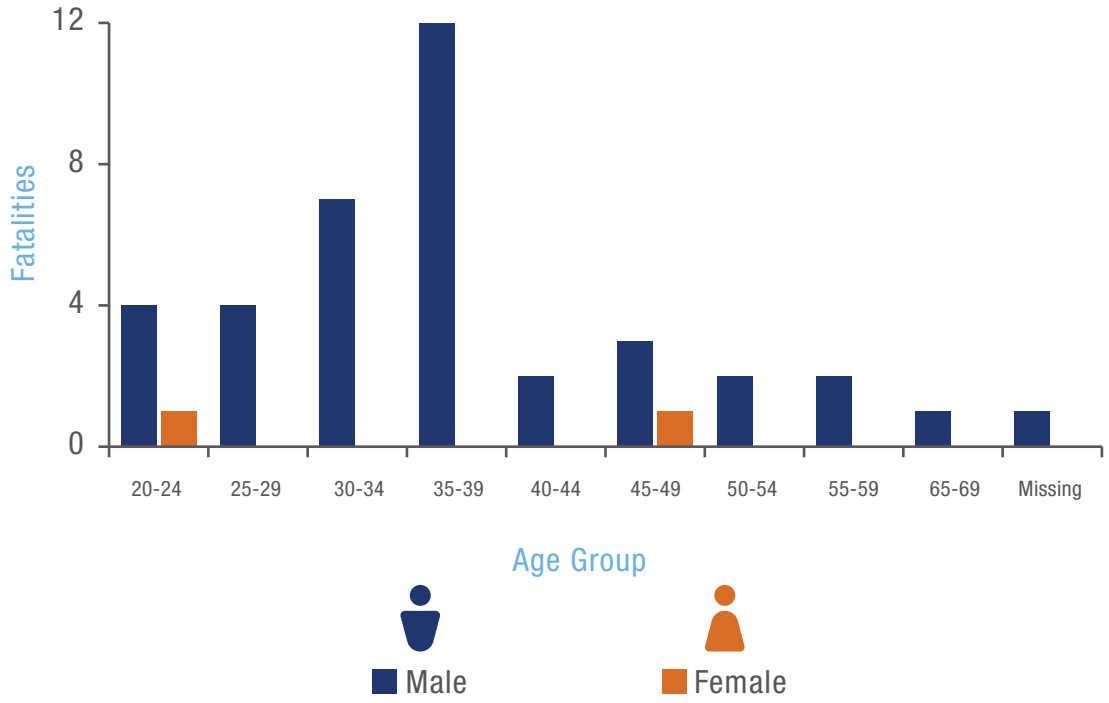
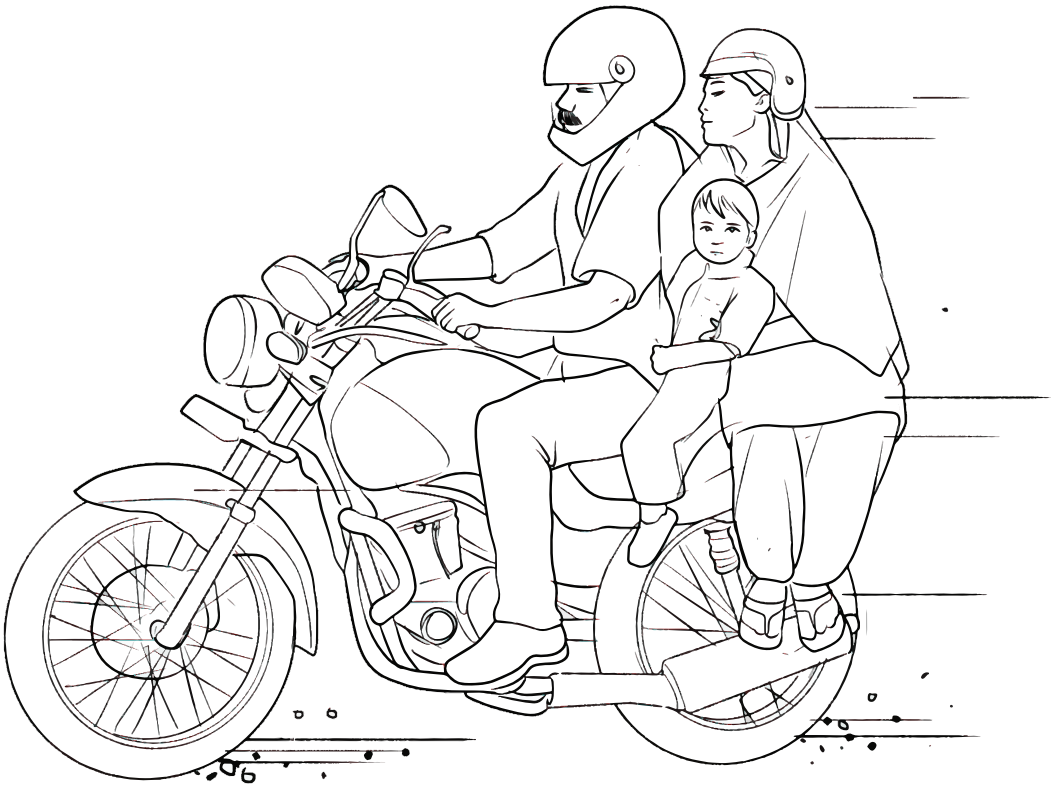


Figure 10: Motorcycle Deaths by Age Group, 2020 - 2022

Figure 10 shows that motorcycle deaths were the highest among people 30-to-39 years old. The majority of motorcyclist deaths involve men and accounted for 95% of motorcyclist deaths.

Motorcycle deaths were the highest among people 30 to 39 years old



9. PEDESTRIAN DEATHS BY AGE GROUP AND GENDER

The age distribution of pedestrian road deaths varied significantly from other road users. The fatalities were distributed relatively evenly across age groups, rather than the predominant pattern of risk among 15-to-39 year old seen for other road users. The number of pedestrian deaths was highest among 60-to-64 year old men and among 55-to-59 year old women, along with 0-to-4 year olds. This higher risk among the younger and older age groups urges strong consideration for the needs of children and elderly people while designing any pedestrian facility. Inclusive design of pedestrian facilities and speed management would be effective in improving pedestrian safety.

Pedestrian deaths was highest among 60 to 64 year old men and among 55 to 59 year old woman

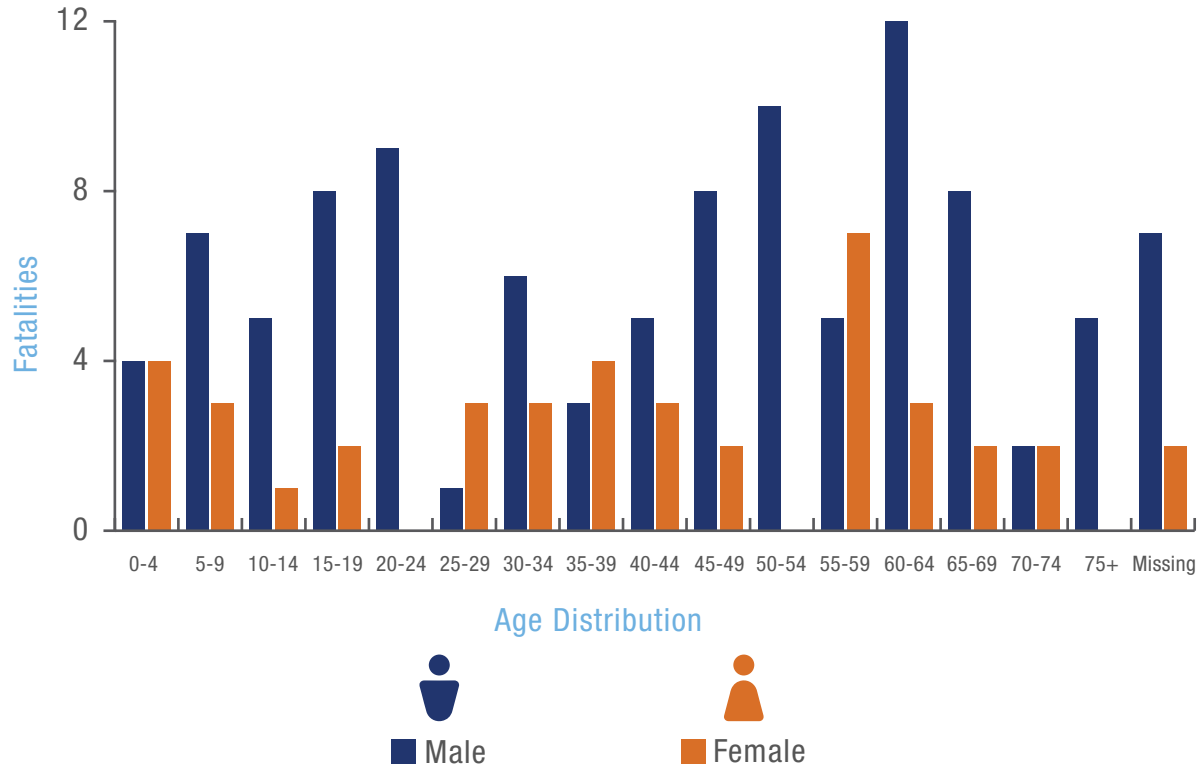


Figure 11: Pedestrian deaths by age group and gender

10. AGE DISTRIBUTION OF DRIVER AT-FAULT IN FATAL CRASHES

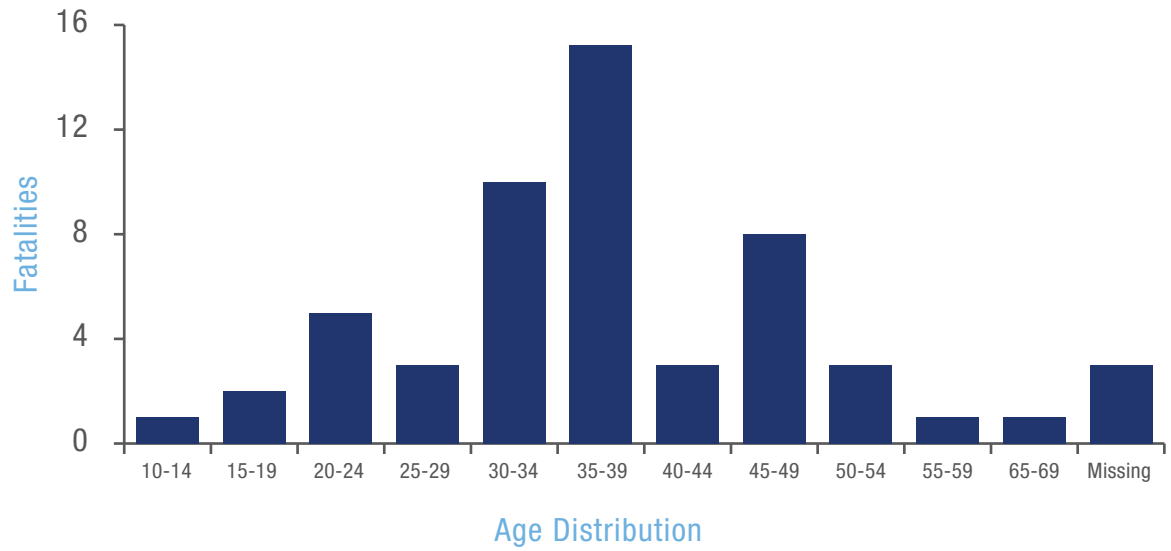


Figure 12: Age Distribution of Driver At-Fault in Fatal Crashes

Figure 12 indicates that drivers aged 35-to-39 are involved in fatal crashes more than others. Drivers aged 30-to-34 are the second most frequently involved group.

Drivers aged 35 to 39 are involed in fatal crashes more than others

11. HIT AND RUN CRASHES SCENARIO

When the driver and vehicle information is not available in a FIR, this crash is treated as hit and run case. Hit and Run crashes were common in the study period, 2020 to 2022. Among all fatal crashes in three years, 33% were hit-and-run cases while 67% found not a hit and run.

Among all fatal crashes in three years, 33% were hit and run cases while 67% found not a hit and run

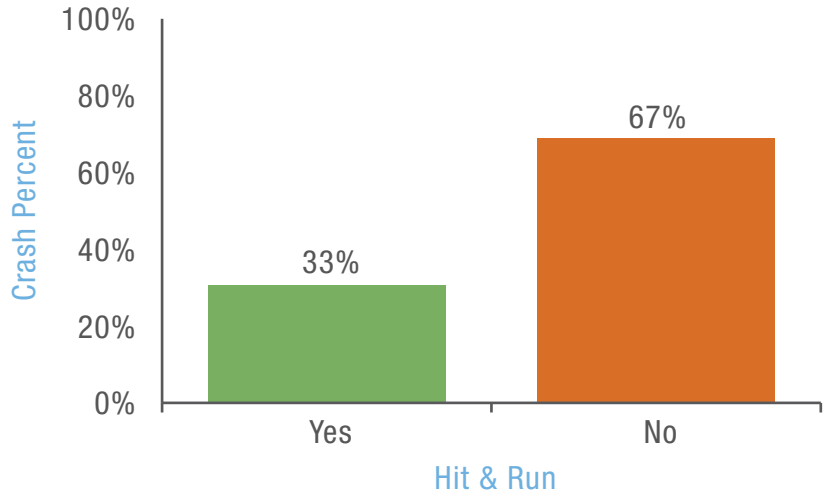


Figure 13: Hit and Run Crashes

12. FATAL CRASHES BY MONTH, 2022

Figure 14 indicates that there is no discernible trend in fatal crashes throughout the year 2022. Most fatalities occurred during May, possibly because of key holidays such as the most celebrated religious festival, Eid-Ul-Fitr, which in 2022 was held on May 3. During this festival time, people move from one place to another to meet with family and friends, increasing exposure to risk and crashes. Data from 2020 and 2021 were excluded from this analysis because of the significant change in travel behaviour during the pandemic mobility restrictions.

Most fatalities occureed during May 2022

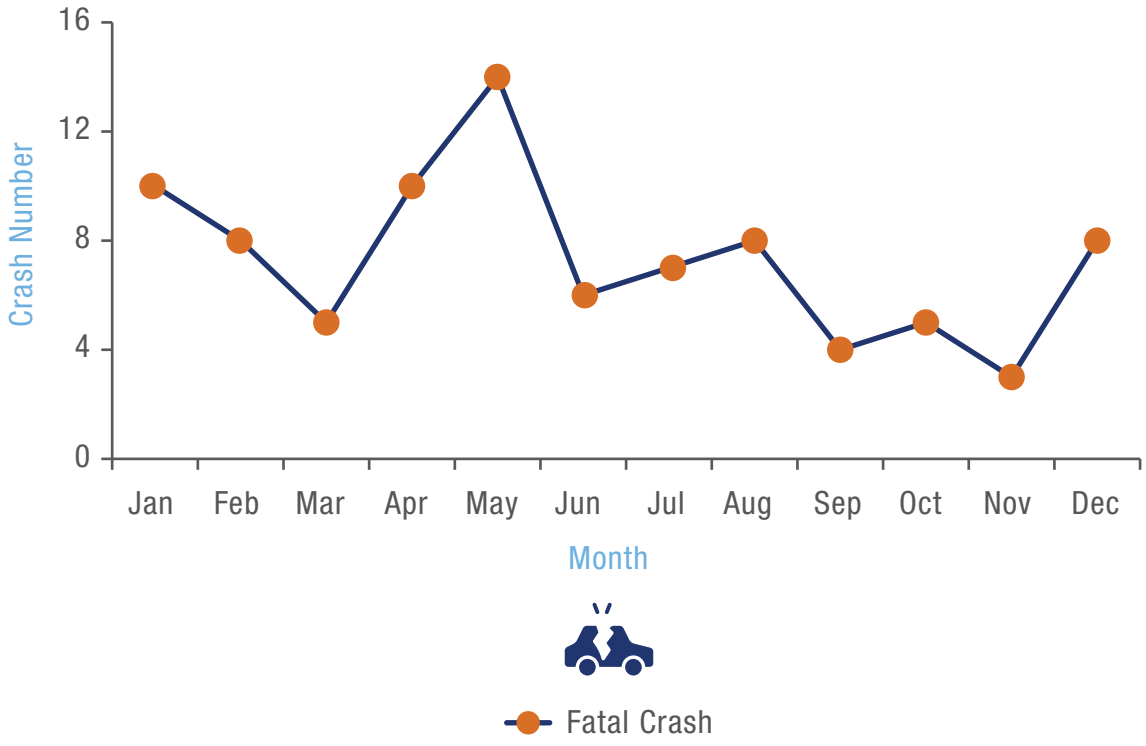
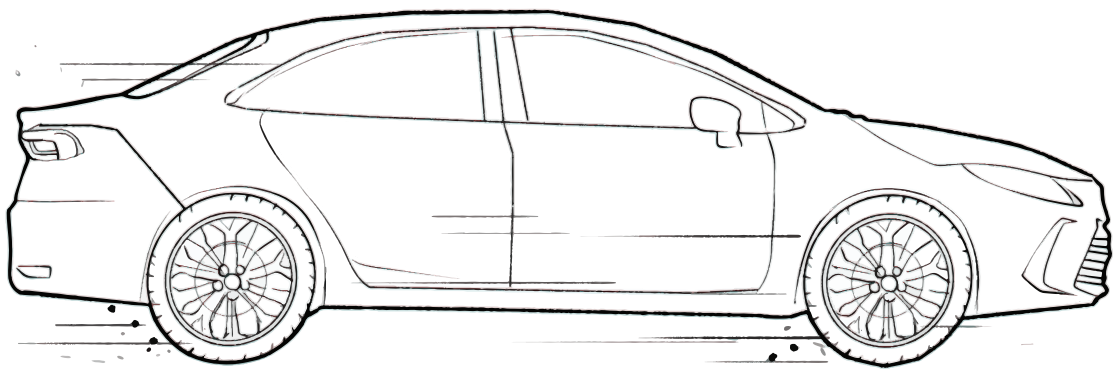


Figure 14: Fatal Crashes by Month, 2022



13. TIME-OF-DAY, DAY-OF-WEEK DISTRIBUTION OF FATALITIES:

Table 2 indicates the hourly distribution of fatalities based on time of day and day of week. The largest number of fatalities occurred on Thursday between 8p.m and 12p.m. and on Saturday from 4p.m. to 8p.m

The largest number of fatalities occureed on Thursday between 8 P.M and 12 PM

Day / Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat
0000-0400	5	6	2	1	2	9	1
0400-0800	7	8	1	5	4	5	6
0800-1200	6	3	7	4	4	6	3
1200-1600	6	3	6	8	3	12	3
1600-2000	11	9	11	10	5	6	15
2000-2400	10	4	3	8	16	7	11

Table 2: Road Crash Deaths by Time and Day, 2020-2022

Technical Note: *Time was not mentioned in case of a crash.*

14. VEHICLE INVOLVEMENT IN FATALITIES

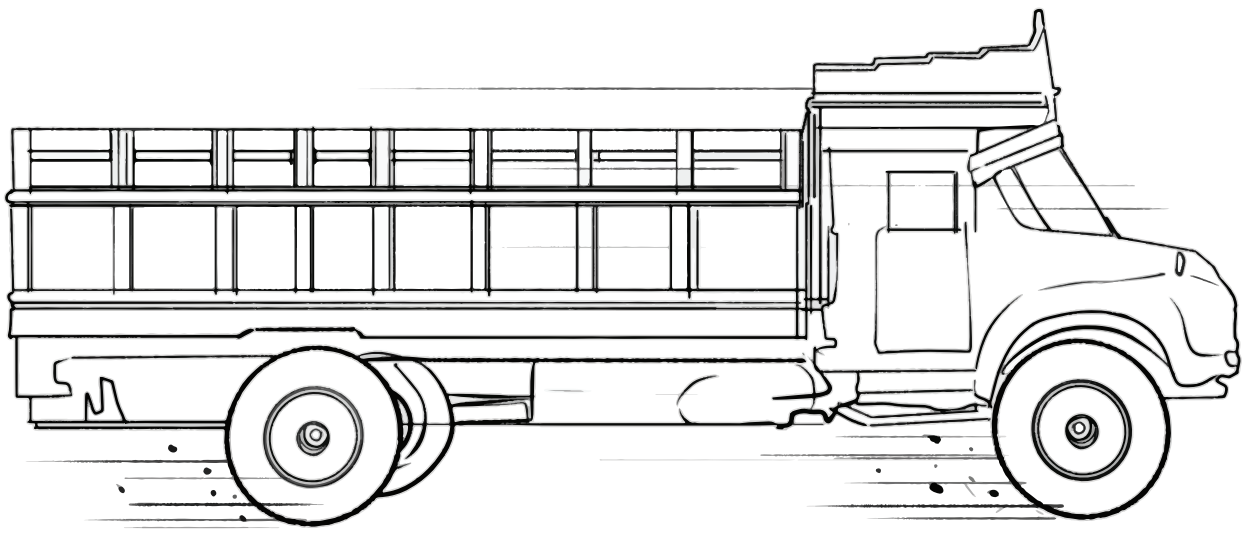
Table 3 illustrates the fatalities occurring between an impacting vehicle and an impacted vehicle or pedestrian. The table shows that heavy trucks were most frequently responsible for pedestrian and motorcycle fatalities. In addition, buses and minibuses accounted for a significant number of pedestrian fatalities. Besides, large number of fatalities occurred due to crashes between Heavy Trucks and Motorcycles. Information of 52 road traffic deaths were not presented in the data.

Trucks were most frequently responsible for pedestrian and motorcycle fatalities

Large number of fatalities occurred due to crashes between Heavy Trucks and Motorcycles

Impacting Vehicle / Road User	Heavy Truck	Bus & Minibus	Car,Jeep & Pick-Up	Microbus	Motorcycle	CNG-Taxi & Tampoo	Other	Total
Pedestrian	35	25	10	7	8	17	2	104
Motor Cycle	24	7	3	0	0	0	0	34
CNG-Taxi & Tempoo	9	4	0	0	0	1	5	19
Bicycle	2	3	0	0	0	0	0	5
Rickshaw	14	3	1	1	0	0	0	19
Car, Jeep & Pickup	4	1	0	0	0	0	3	8
Heavy Truck	2	4	0	0	0	0	4	10
Bus	0	6	0	0	0	0	6	12
Total	90	53	14	8	8	18	20	211

Table 3: Vehicle-Victim Fatalities Matrix



IDENTIFICATION OF HAZARDOUS ROAD LOCATIONS AND CORRIDORS

High-risk road locations were identified using OpenStreetMap and analysed using QGIS.

1. HIGH-RISK ROAD LOCATIONS (HRL)

Table 4 contains the top 10 high-risk road locations in Chattogram based on the number of road crash fatalities. Each location encompassed a 250-metre radius.

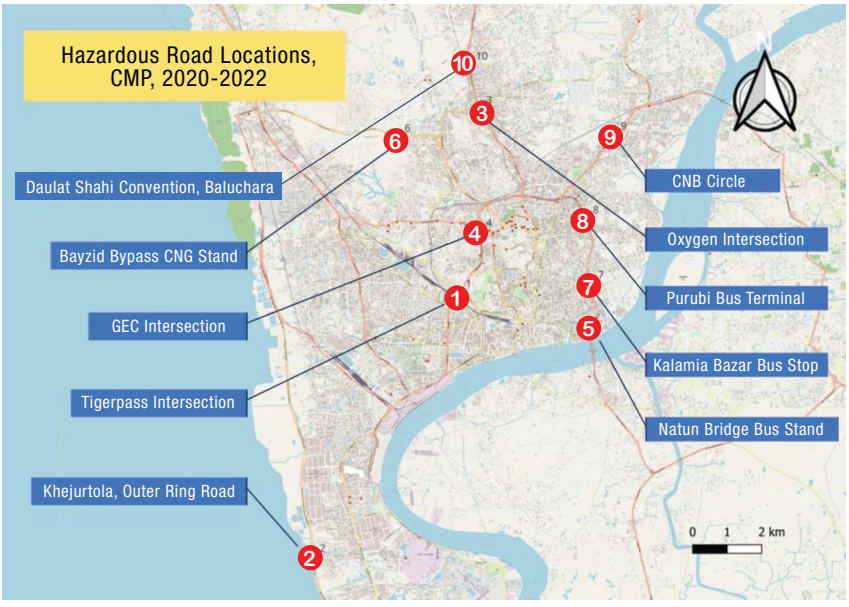
Rank	Location Name	Fatalities within 250 Meter Radius
1	Tigerpass Intersection	5
2	Khejur Tola, Ourter Ring Road	5
3	Oxygen Intersection	4
4	GEC Intersection	4
5	Natun Bridge Bus statnd	4
6	Bayzid Bypass CNG Stand	4
7	Kalamia Bazar Bus Stop (Blooming Community Center)	3
8	Purubi Bus Terminal (New Chandgaon Thana)	3
9	CNB circle	3
10	DaulatShahi Convention, Baluchara	3

Table 4: Top 10 HRL in CMP, 2020-2022

From this table, Tigerpass Intersection and Peari Kutir (Khejur Tola-Outer Ring Road) recorded the highest number (5) of fatalities followed by Oxygen intersection, GEC Intersection, Natun Bridge Bus Stoppage and Bayzis Bypass CNG stand consecutively.

Tigerpass Intersection and Peari Kutir (Khejur Tola- Outer Ring Road) recorded the highest number (5) of fatalities

Hazardous road locations are given in Map 1.



Map 1: Hazardous Road Locations in CMP, 2020-2022

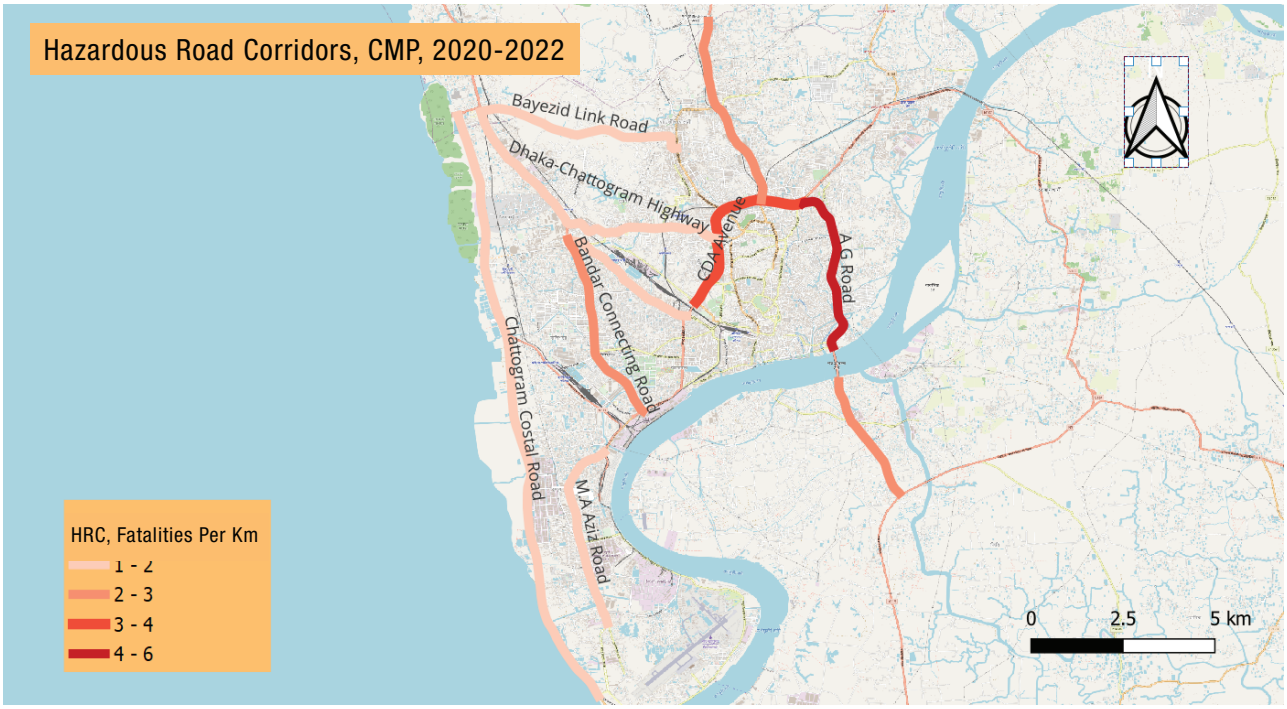
2. HIGH-RISK ROAD CORRIDORS

Table 5 presents the top 10 high-risk road corridors. Fatalities were plotted on a map and the corridors with the highest fatalities were ranked based on the fatalities per kilometer. Corridors which had at least one fatality per kilometer of road were considered high-risk road corridors.

HRC_ RANK	Road Name	Starting	Ending	Km	Fatalities	Fatalities Per Km
1	AG Road	Markazul Ulum Jame Mosque	Bahaddarhat	4.94	28	5.7
2	CDA Avenue	Bahaddarhat	Tigerpass	5.21	20	3.8
3	Chattogram-CoxBazar Road	Patia Crossing	Shah Amanat Bridge End	3.79	11	2.9
4	Bandar Connecting Road	Alangkar Circle	Nimtoli Biswa Road Bus Stop	5.5	12	2.2
5	Chattogram - Rangamati Highway	Muradpur Bus Stop	BRTC Bus Depot, Borodighir par	7.5	16	2.1
6	Dhaka-Chattogram Highway	Bayzid Link Road Intersection	GEC Circle	8.55	17	2.0
7	M.A Aziz Road	Patenga City Corporation Mohila College	Saltgola Crossing	5.41	10	1.8
8	Bayezid Link Road	Dhaka-CTG Intersection	Bayezid Road	5.63	10	1.8
9	Dhaka Trunk Road	Alangkar Circle	Dewanhat Bus Stop	4.1	7	1.7
10	Chattogram Costal Road	Port Link Road Roundabout	Bangabandhu Tunnel Roundabout	18	27	1.5

Table 5: Top 10 High-risk Road Corridors in CMP, 2020-2022

All these corridors are illustrated in Map 2.



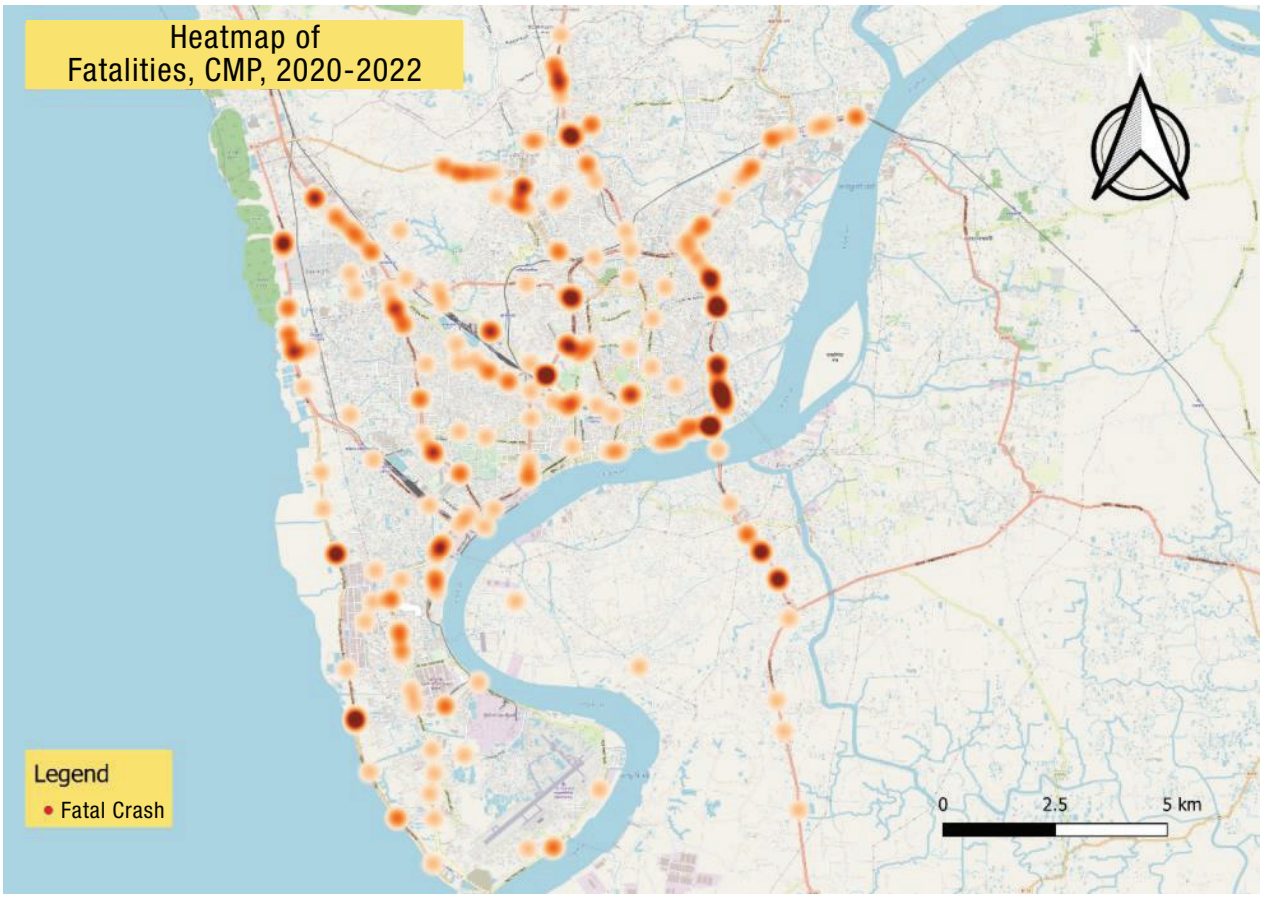
Map 2: Hazardous Road Corridors in CMP, 2020-2022

Based on Table 6 and Map 2, AG Road and CDA Avenue (Markazul Ulum Jame Mosque to Bahaddarhat) and Bahaddarhat to Tiger Pass Circle are the most hazardous road sections in the CMP area, with approximately six fatalities per kilometre of road occurring in the last three years. Other high-risk corridors include Chattogram–Cox Bazar Road (Patia Crossing to Shah Amanat Bridge End) and Bandar Connecting Road, which have two to three fatalities per kilometer. These locations need further assessment to identify the risk causes and design effective countermeasures.

SPATIAL ANALYSIS CRASH IN CMP , 2020-2022

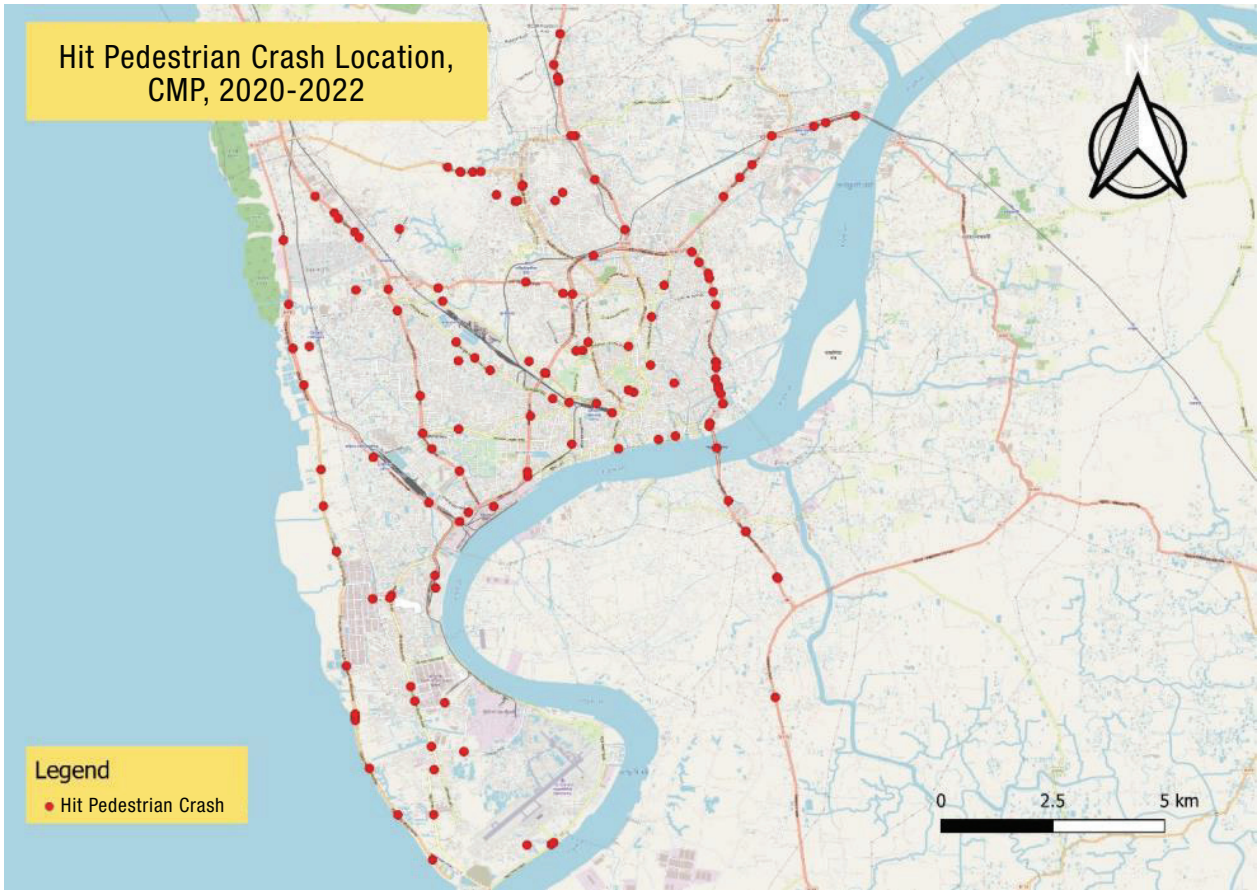
These maps show the concentration of all road traffic deaths combined, and for pedestrians and motorcyclists.

HEATMAP OF ALL FATALITIES IN CHATTOGRAM METROPOLITAN AREA



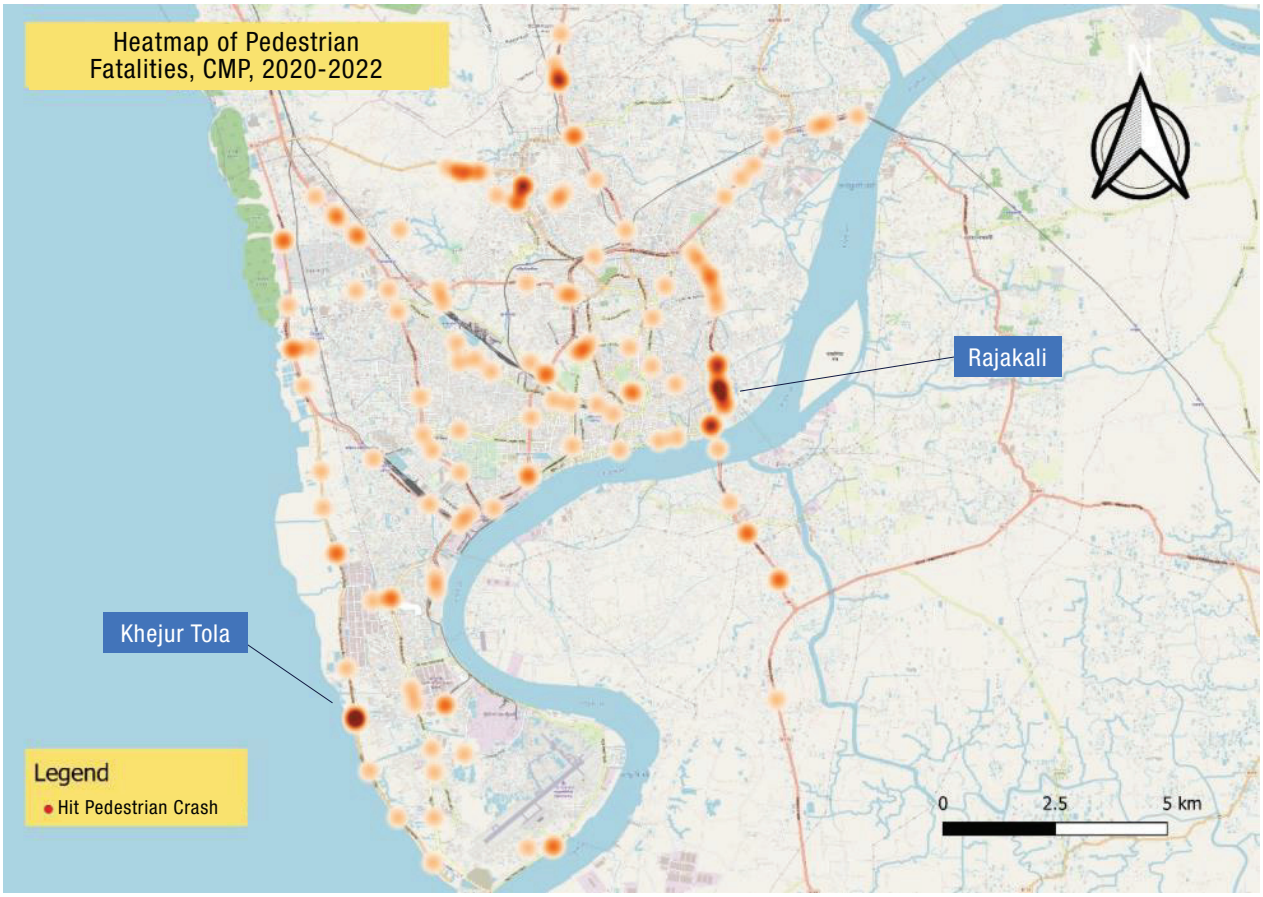
Map 3: Heatmap of all fatalities in Chattogram Metropolitan Area

HIT PEDESTRIAN FATAL CRASH LOCATIONS IN CHATTOGRAM METROPOLITAN AREA



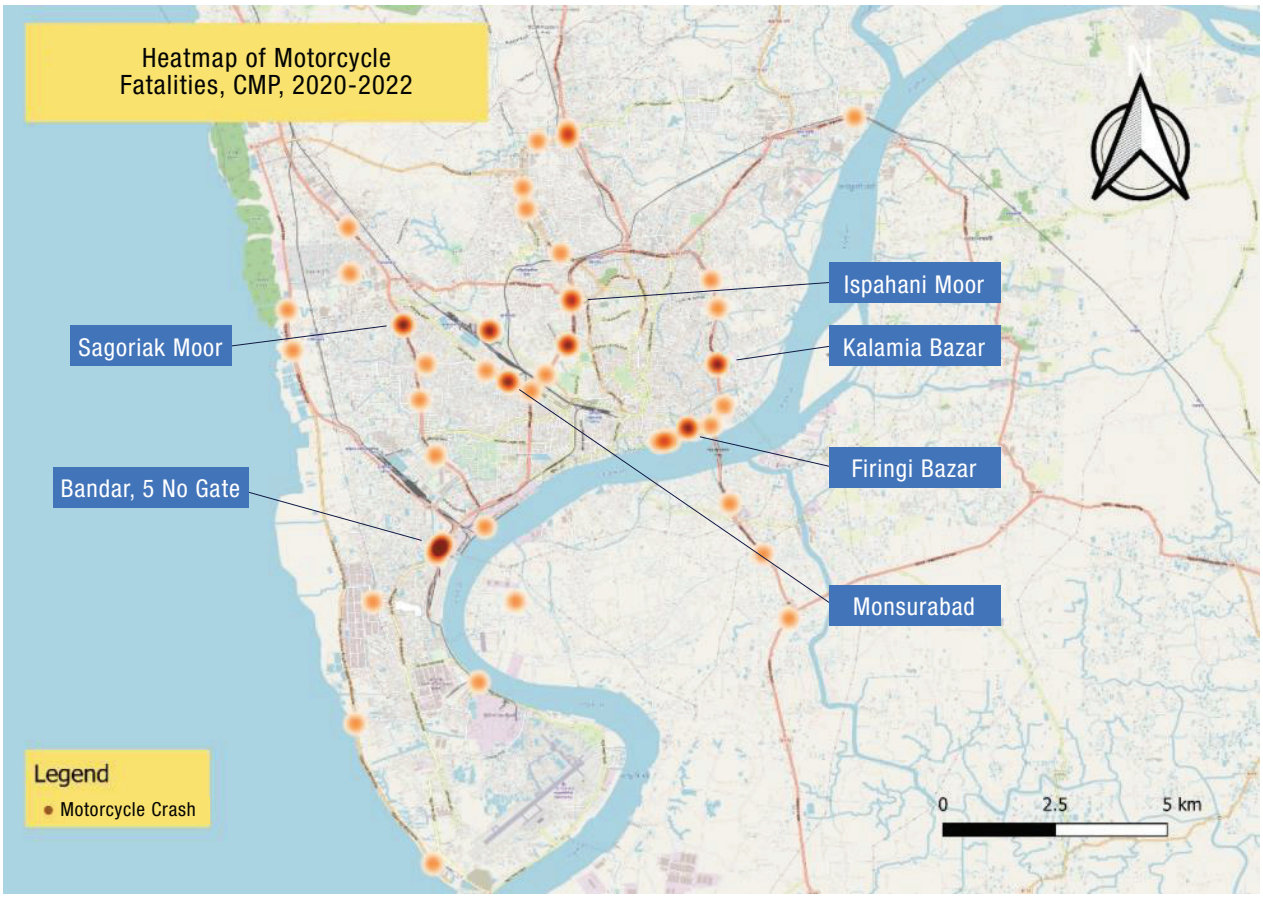
Map 4: Hit pedestrian fatal crash locations in Chattogram Metropolitan Area

HEATMAP OF HIT-PEDESTRIAN FATALITIES IN CHATTOGRAM METROPOLITAN AREA



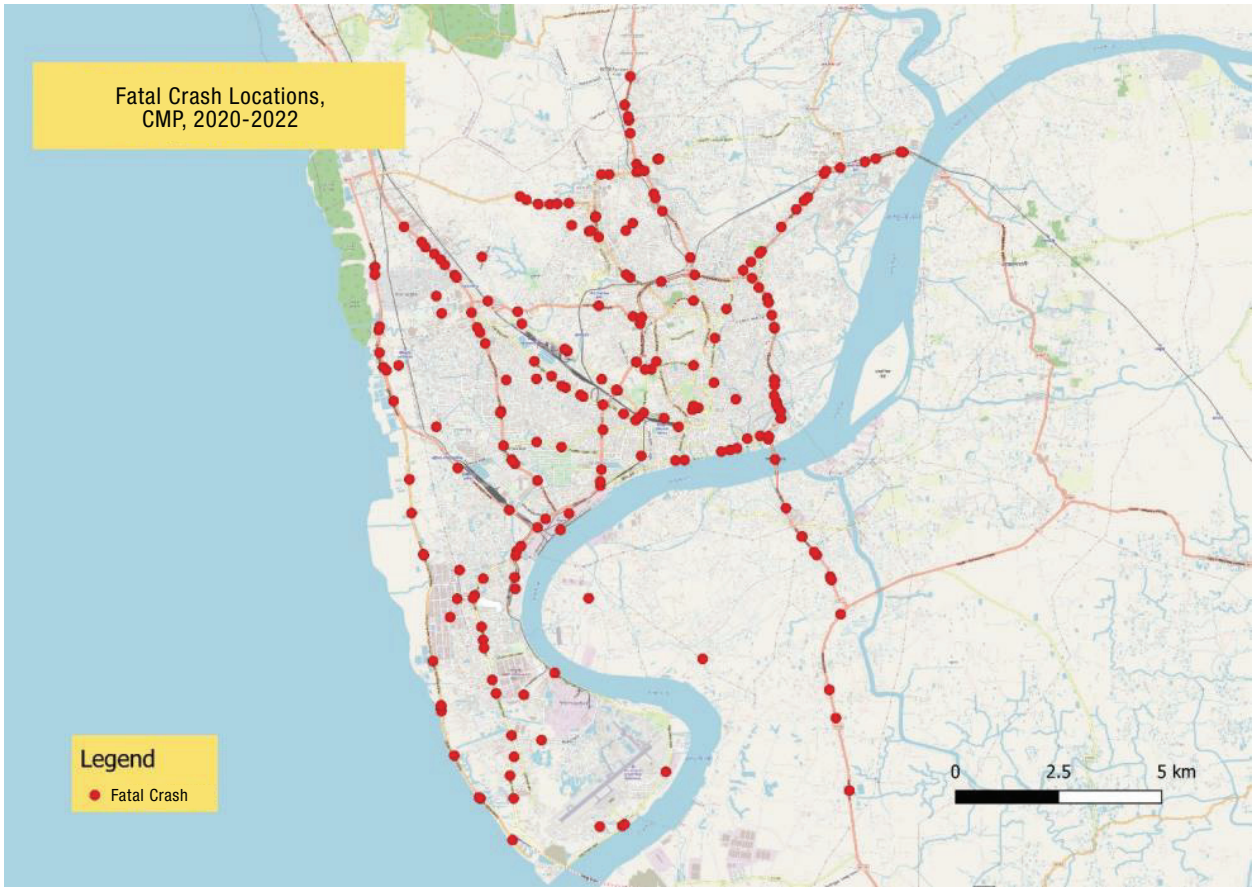
Map 5: Heatmap of hit-pedestrian fatalities in Chattogram Metropolitan Area

HEATMAP OF MOTORCYCLE CRASH FATALITIES IN CHATTOGRAM METROPOLITAN AREA



Map 6: Heatmap of motorcycle crash fatalities in Chattogram Metropolitan Area

ALL FATAL CRASH LOCATIONS IN CHATTOGRAM METROPOLITAN AREA



Map 7: All fatal crash locations in Chattogram Metropolitan Area

SUMMARY

This report is the first one of its kind that presents the road safety situation in Chattogram. The analyses included in this report should serve as a guide for further investigation of specific risk factors and high-risk locations. Below is a summary of key statistics:

- Pedestrians are the most vulnerable road user group, accounting for 56% of the total deaths in Chattogram. Pedestrian deaths increased from 2020 to 2022. The top 10 high-risk locations and corridors were identified for further investigation and improvement. In particular, priority should be given to the highest risk location, which was the Tigerpass intersection, Khejur Tola (Outer Ring Road), having five fatalities per kilometer of road. The highest-risk corridor identified was AG Road, which had 28 deaths within 5km road only.
- Bayezid Bostami police station has the highest number of crash reports, followed by Bakolia, Bandar, Chandgaon and so on.
- Fatal crashes, fatalities, and fatality rates all saw an increase from 2020 to 2022. A small decline occurred from 2021 to 2022, but given the data limitations, this may not be a meaningful trend.
- Men accounted for 81% of all road crash fatalities from 2020 to 2022; women accounted for the remaining 19%.
- Fatalities were highest among young males between the ages of 20 and 54, the active group of people.
- Motorcycle deaths were most frequent among people from 35 to 39 years old.
- Pedestrian deaths occurred in roughly the same numbers across age groups, with higher risk among children and older people than other road user types.
- Men between the ages of 35 and 39 were most frequently involved in fatal crashes as the impacting drivers.
- 33% Hit-and-run crashes are observed in CMP. In many cases, information about drivers or vehicles are not well documented. Crash data collection process should be revised and improved.
- Fatalities occurred most frequently during May. This could be associated with Eid-Ul-Fitr in May of higher mobility.
- Heavy trucks cause many pedestrian and motorcyclist fatalities.

DISCUSSION AND RECOMMENDATIONS

This report has highlighted the road safety situation in Chattogram City and has identified the associated factors, trends, and patterns of crashes along with high-risk road locations and corridors. To reduce road deaths in Chattogram City, policymakers should consider the following recommendations:

- A further investigation of high-risk locations for pedestrians should be prioritised, given that they are the most vulnerable group in road crashes. Evidence-based interventions that ensure pedestrian safety should be implemented. Examples include fully pedestrianising key roads, junctions, and plazas,[7] reducing the number of lanes,[8] narrowing vehicle lanes,[9] widening footpaths, constructing raised crosswalks,[10] ensuring continuous footpaths,[11] implementing curb extensions,[12] placing speed humps,[13] and installing pedestrian islands.[14] There should also be a focus on speed reduction near schools, bazaars, and residential areas. Enforcement and awareness program should also be combined with engineering measures.

- Safer forms of mobility should be prioritised and more efforts should be made to make communities walkable and bikeable, with less prioritisation of motorised vehicle travel (cars, trucks, and motorbikes). Bus route rationalization should be introduce in the city to improve the discipline and control reckless driving.

- Institutional arrangements should be established that enable stakeholders to work together toward road safety. Chattogram City Corporation (CCC), Chattogram Development Authority (CDA), Bangladesh Road Transport Authority (BRTA), the CMP, and other stakeholders should be able to meet regularly regarding road safety and should collaborate and align in ensuring roads are safe in Chattogram. This measure also includes increasing public engagement and participation in road safety.

- Data improvement programs should be implemented, primarily through the establishment of a welldefined institutional arrangement among CCC, CMP, and other stakeholders on crash data collection, management, and sharing. The national crash database must be identified and scaled up in Chattogram. Processes and adequate training must be provided to ensure that this road safety report is produced and published annually. Finally, capacity-building on crash data collection, entry and management, and analysis must be provided.

---

[7] Transportation Alternatives. Open Streets Forever The Case for Permanent 24/7 Open Streets. October 12, 2021

[8] Strupp, Julie. Heard of "road diets?" Here's why fewer lanes can actually be faster—and safer. November 9, 2018

[9] Banerjee, Subha Ranjan and Ben Welle. Bigger Isn't Always Better: Narrow Traffic Lanes Make Cities Safer. December 6, 2016

[10] America Walks. "Walkability Wins Part Twenty: Accessibility, Raised Crosswalks and Road Diets!." August 16, 2023

[11] Slaughter, Jason. "The Dutch Solution for Safer Sidewalks: Continuous Sidewalks". Dec 2, 2019.

[12] National Association of City Transportation Officials. "Curb Extensions," July 11, 2013.

[13] Sebastian, Simone. "Speed Humps Save Lives: New study finds significant drop in injuries to kids." SFG, April 1, 2004.

[14] Roger Rudick. "SF Needs Pedestrian Refuge Islands to Save Lives." SB, December 14, 2017.

CHATTOGRAM CITY ROAD SAFETY REPORT

2020 - 2022

September 2023

Vital Strategies