



पिंपरी-चिंचवड

PIMPRI-CHINCHWAD

ROAD SAFETY REPORT

2022-2023





ACKNOWLEDGEMENTS

Pimpri-Chinchwad is among the global cities and regions participating in the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS). Committed to improving road safety, the Government of Maharashtra signed a participatory agreement with the BIGRS in August 2022 to implement global best practice measures that can help prevent road crashes and, in turn, save lives in the region. Among the key objectives of the initiative is to strengthen road safety data to improve data-led intervention planning, monitoring, and evaluation.

This report was made possible with the continued support of the Pimpri Chinchwad Police. We appreciate the initiative for their continuous support and engagement in making Pimpri-Chinchwad roads safer. We gratefully acknowledge the technical support received from Bloomberg Philanthropies, which made the production of this report possible.

Dr. Niteen Gujarathi (Surveillance Coordinator), BIGRS Pune District, was responsible for data management and analysis with support from Dr. Sara Whitehead, Ezequiel Dantas, Mirick Paala, Dr. Pratibha Pawar, Preeti Iyer, and Grant Ennis from Vital Strategies. Kanchan Awate, Swapnil Rawal, Rajendrakumar Shede, and Saurabh Sonawane from BIGRS Pune contributed critical guidance and support throughout the process. Dr. Zahir Hasan from JH-IIRU and Elizaveta Zeynalova from Vital Strategies PAC team also contributed to this report by providing their data.

PREFACE



Vinoy Kumar Choubey, IPS

Commissioner of Police,
Pimpri-Chinchwad
Maharashtra, India



Over the last decade and a half, Pimpri-Chinchwad has witnessed notable economic growth driven by industrial activities, accompanied by a sharp rise in population and vehicle density. These changes and growth have heightened the necessity for sustainable transportation and infrastructure for non-motorized transport modes such as walking and cycling.

The Road Safety Report improves our understanding of road injuries as a multi-faceted and multi-sectorial issue. Pimpri-Chinchwad accounted for 22% of the District's total fatal crashes in 2022 and 2023, in which primarily powered two-wheeler users and pedestrians lost their lives. Vulnerable road users, such as pedestrians and powered two-wheelers account for the largest share of road deaths, both globally and in our city. In 2023, this group accounted for 89 % of road crash deaths in the city.

There is a marginal drop in the number of road crash deaths (by 3%) in 2023 as compared to the previous year, and the Pimpri-Chinchwad Police continues in its mission to reduce road crashes and deaths. Additional enforcement drives and better coordination with road-owning agencies for engineering solutions will help us in our endeavor.

A collaborative approach towards comprehensive measures in Pimpri-Chinchwad as well as across Pune district will make roads safer for all users. This report will serve as a handbook for devising policies to make our roads safer for all by focused enforcement measures.

I congratulate all government stakeholders and Bloomberg Philanthropies Initiative for Global Road Safety partner, Vital Strategies, on releasing the report and I complement their joint efforts.

Vinoy Kumar Choubey, IPS

PREFACE



Bapu Bangar

Deputy Commissioner of Police (Traffic),
Pimpri-Chinchwad
Maharashtra, India



Road crashes continue to pose a significant public health and urban safety challenge across India, particularly in fast-growing cities such as Pimpri-Chinchwad. This Road Safety Report highlights a sobering reality: in 2022 and 2023, nearly one person lost their life every day due to a road crash in our city. Beyond the numbers, the report draws attention to the profound human impact—eight out of ten victims were adults in their most productive years, aged between 20 and 59.

A striking 89% of all fatalities involved vulnerable road users—pedestrians and powered two-wheeler users. As per the observation data collected by Johns Hopkins International Injury Research Unit, the prevalence of speeding for all observed vehicles in the city was 28%. Crash data analysis showed that 41% of fatal road crashes were recorded between 6 pm and midnight.

The report also showed that the fatalities of the powered two-wheeler users were 59%, indicating the need for adherence to the helmet-clasping law by the motorcyclist. Pimpri-Chinchwad city has some high-risk locations along the Nashik Phata-Bhosari-Chakan-Ambethan Chowk on the Pune-Nashik Highway, where all road users must follow road safety precautions.

In 2023, there was a modest 3% decrease in road crash deaths compared to the previous year. This marginal decline is an encouragement for our actions, but it also underscores the need for stronger and sustained action. The Pimpri-Chinchwad Police remains committed to reducing fatalities by addressing key risk factors, including excessive driver speeds, helmet and seat-belt use, and drink-driving.

Pimpri-Chinchwad Traffic Branch is actively collaborating with road-owning agencies to identify and rectify high-risk corridors and blackspots across the city. With the support of enhanced crash surveillance systems, data-driven enforcement, and the promotion of safer street designs, we aim to create a safer urban environment for all. To achieve this, the Pimpri-Chinchwad Police also requires the support of citizens in following all road traffic rules, driving as per the prescribed speed limit, adhering to seatbelt and helmet-clasping laws, and not drink-and-drive.

To this end, we are working closely with the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) and its technical partners. I urge all stakeholders to leverage the insights in this report to inform their efforts. I extend my appreciation to BIGRS and Vital Strategies for their continued support and dedication to road safety.

Bapu Bangar

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Abbreviations

BIGRS	Bloomberg Philanthropies Initiative for Global Road Safety
CCTNS	Crime and Criminal Tracking Network System
CP	Commissioner of Police
DCP	Deputy Commissioner of Police
eDAR	e-Detailed Accident Report
FIR	First Information Report
HMV	Heavily Moderate Vehicle
HV	Heavy Vehicles
IO	Investigation Officer
JCB	Joseph Cyril Bamford
JH-IIRU	Johns Hopkins International Injury Research Unit
JHU	John Hopkins University
LMV	Light Motor Vehicle
MHV	Moderate Heavy Vehicles
MoRTH	Ministry of Road Transport and Highways
NIC	National Informatics Center
PAC	Vital Strategies Policy, Advocacy, and Communications
PCMC	Pimpri Chinchwad Municipal Corporation
QGIS	Quantum Geographic Information System
RTO	Regional Transport Office
RUT	Road User Type
SI	Serious Injury
SUV	Sport Utility Vehicle
UT	Union Territory



Executive Summary

Over 700 people died on the roads of Pimpri-Chinchwad between 2022 and 2023. In 2023, road crash deaths only decreased by 3% compared to the previous year, showing how current road safety efforts are not enough to significantly bring down deaths. Eight out of 10 victims were between 20 and 59 years of age. Nearly 9 out of 10 lives lost were those of vulnerable road users – 59% of victims were powered two-wheeler users while 30% were pedestrians. Many pedestrians were killed in fatal collisions with heavy vehicles (28%) and LMV (15%).

There are 74 dangerous locations, or blackspots¹, in Pimpri-Chinchwad where road crashes claimed at least 5 fatal or serious injury road crashes over two consecutive calendar years in the aforementioned period. Four corridors, or stretches of road, in various parts of the Pimpri-Chinchwad were identified to be extremely dangerous for all road users. Around 36% of the fatal crashes were recorded during the late evening hours through midnight (i.e., 7pm to 12am).

This report presents these findings by visualizing road crash deaths data disaggregated in terms of road user groups, their gender and age groups, who-hit-whom matrices and heatmaps presenting temporal distribution of fatal and serious injury crashes. Further, road crash deaths in Pimpri-Chinchwad have been mapped to enable the identification of high-risk corridors and blackspots in the region.

This report not only presents findings from police data but also highlights key insights from a roadside observations study by the Johns Hopkins International Injury Research Unit (JH-IIRU) of the Johns Hopkins University (JHU) conducted in 2023. The roadside observations study focused on examining the prevalence of critical road safety risk factors, including speeding, non-use of helmets, and the lack of seatbelt and child-restraints use among road users.

The analyses presented aim to provide inputs to improve safety in high-risk locations and corridors, strengthen surveillance data systems, and inform enforcement. The findings and recommendations of this report will guide and empower key actors and stakeholders in Pimpri-Chinchwad to build safer roads for all road users.

¹Ministry of Road, Transport, and Highways (MoRTH), (2015). Protocol for identification and rectification of road accident blackspots on National Highways

INTRODUCTION

Road crashes are the leading cause of death worldwide for young people between 5 and 29 years of age. Road injury is the 12th leading cause of death for all ages².

A total number of 4,61,312 road crashes have been reported by Police Departments of States and Union Territories (UTs) in the country during the calendar year 2022, claiming 1,68,491 lives and causing injuries to 4,43,366 persons³. Maharashtra reported 15,366 road crash deaths in 2023, a 14% increase from 2021. The total number of fatal crashes, on the other hand, increased from 12,554 in 2021 to 14,119 in 2023, a 12% increase⁴.

The roads of Pimpri-Chinchwad have witnessed at least 23% of all road crash deaths in the Pune district in 2022⁴.

²WHO (2023) Global Status Report on Road Safety

³MoRTH (2022) Road Accidents in India

⁴Maharashtra Road Crash report 2022

METHODOLOGY

Data Collection & Collation	Data Entry	Data Cleaning & Analysis
1. Meetings with the DCP Traffic to request for FIRs.	1. The BIGRS team scanned the FIR copies.	1. Data Cleaning: Resolved issues in the database by checking data for duplication, accuracy, and completeness.
2. Traffic office compiled FIR hard copies month-wise and PS-wise.	2. Started receiving soft copies of FIRs from CCTNS.	2. Data Analysis: performed using a) Microsoft Excel to create tables & charts, and b) QGIS to create heatmaps.
3. The BIGRS team reviewed copies to check for duplication.	3. Data entry of fatal and Grievous injury crashes in Epi Info.	

ROAD SAFETY SITUATION IN PIMPRI-CHINCHWAD

3. Summary Statistics of Pimpri-Chinchwad

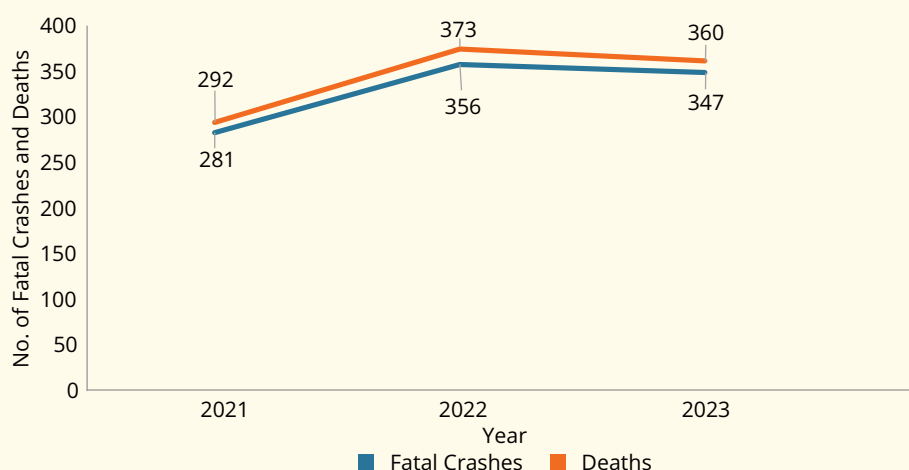
Table No.1: Road Crash Summary of Pimpri-Chinchwad from 2022-2023

	2022	2023	Total
Total Fatal Crashes	356	347	703
Total Serious Injury Crashes	475	542	1017
Total Road Crash Deaths	373	360	733
Total Seriously Injured	621	707	1328

- The number of fatal crashes slightly decreased by 3% in 2023 as compared to 2022.
- The number of serious injury crashes increased by 14% in 2023 as compared to 2022.

3.1 Overview of Fatal and Serious Injury Crashes in Pimpri-Chinchwad

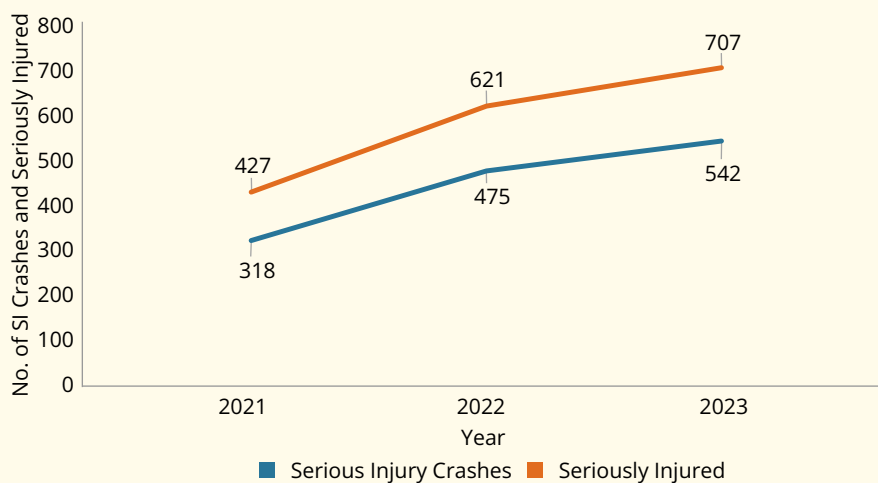
Figure 3.1.1: Fatal Crashes and Deaths in Pimpri-Chinchwad from 2021 to 2023



- A total of 984 fatal road crashes and 1,025 deaths were recorded between 2021 to 2023.
- An overall increasing trend of fatal crashes and deaths - deaths increased by 23% in 2023 as compared to 2021.

(Source: Maharashtra road crash report, 2021 and FIRs received from Pimpri-Chinchwad Traffic Police from 2022-2023)

Figure 3.1.2: Serious Injury Crashes and Seriously Injured in Pimpri-Chinchwad from 2021-2023

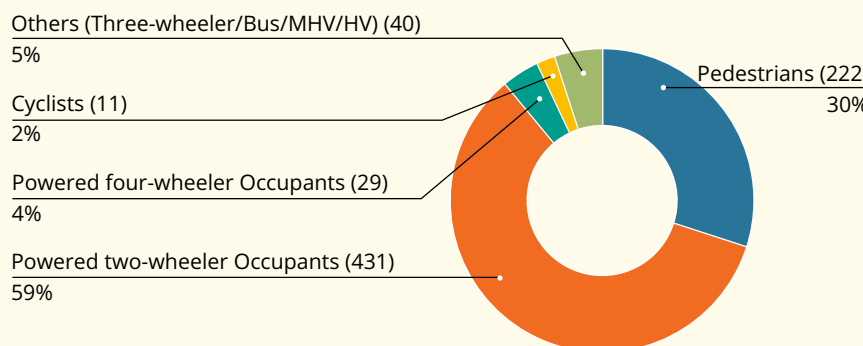


- A total of 1,335 serious injury road crashes and 1,755 serious injuries were recorded between 2021 to 2023.
- An overall increasing trend of serious injury crashes and injuries—seriously injured increased by 66% in 2023 as compared to 2021.

(Source: Maharashtra road crash report, 2021 and FIRs received from Pimpri-Chinchwad traffic office from 2022-2023)

3.2 Road Crash Deaths by Road User Categories in Pimpri-Chinchwad

Figure 3.2.1: Road Crash Deaths by Road User Type in Pimpri-Chinchwad, 2022-2023 (N=733)

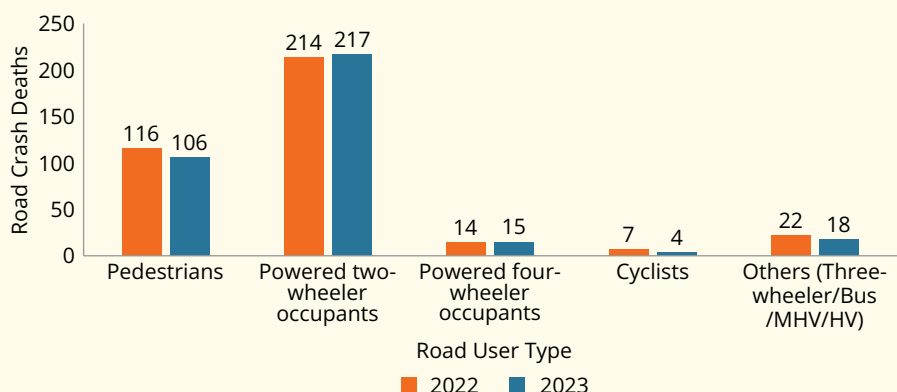


- Most of the deaths were among the powered two-wheeler occupants (59%) and pedestrians (30%).

Findings from the JH-IIRU's observational study:

- Powered two-wheelers had the highest prevalence of speeding (42%), compared to other vehicle types.
- The majority of the powered two-wheeler riders either did not wear helmets (77%) or wore them incorrectly (1%).

Figure 3.2.2: Comparison of Road Crash Deaths by Road User Types by Years in Pimpri-Chinchwad, 2022-2023



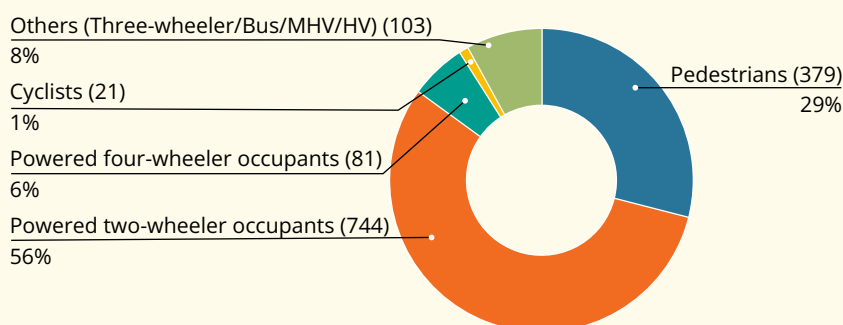
- The deaths decreased by 9% among pedestrians and slightly increased by 1% among powered two-wheeler occupants in 2023, as compared to 2022.

MHV: Moderate Heavy Vehicles (Tempo, Truck, Tractor, Lorry)

HV: Heavy Vehicles (JCB-Joseph Cyril Bamford, Construction Truck, Mixer)

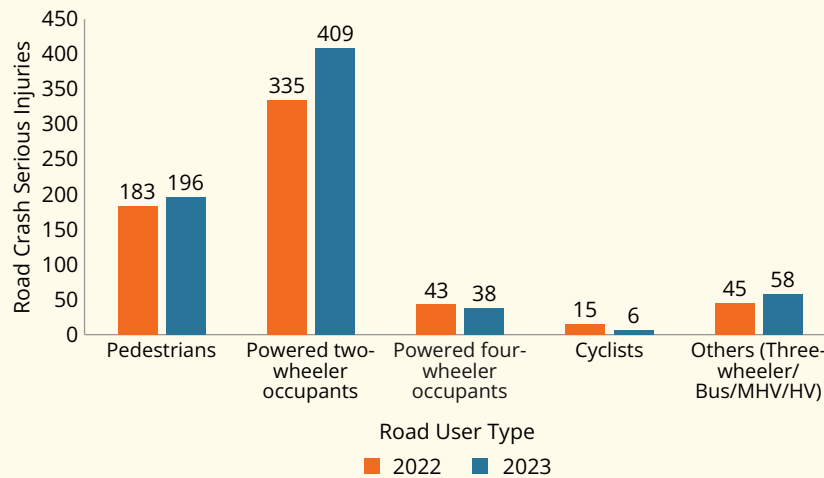
3.3 Road Crash Serious Injuries by Road User Categories in Pimpri-Chinchwad

Figure 3.3.1: Road Crash Serious Injuries by Road User Type in Pimpri-Chinchwad, 2022-2023 (N=1363)



- Majority of serious injuries were among the powered two-wheeler occupants (56%) and pedestrians (29%).

Figure 3.3.2: Comparison of Road Crash Serious Injuries by Road User Types by Years in Pimpri-Chinchwad, 2022-2023



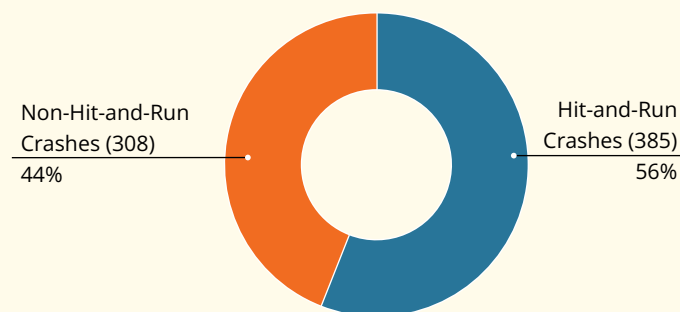
- The serious injuries increased by 7% among pedestrians, by 22% among powered two-wheeler occupants, and by 29% among other road users (three-wheeler/bus/MHV/HV occupants) in 2023 as compared to 2022.

MHV: Moderate Heavy Vehicles (Tempo, Truck, Tractor, Lorry)

HV: Heavy Vehicles (JCB-Joseph Cyril Bamford, Construction Truck, Mixer)

3.4 Fatal Hit-and-Run Crashes in Pimpri-Chinchwad

Figure 3.4.1: Fatal Hit-and-Run Crashes, Pimpri-Chinchwad (2022-2023) (N=693)

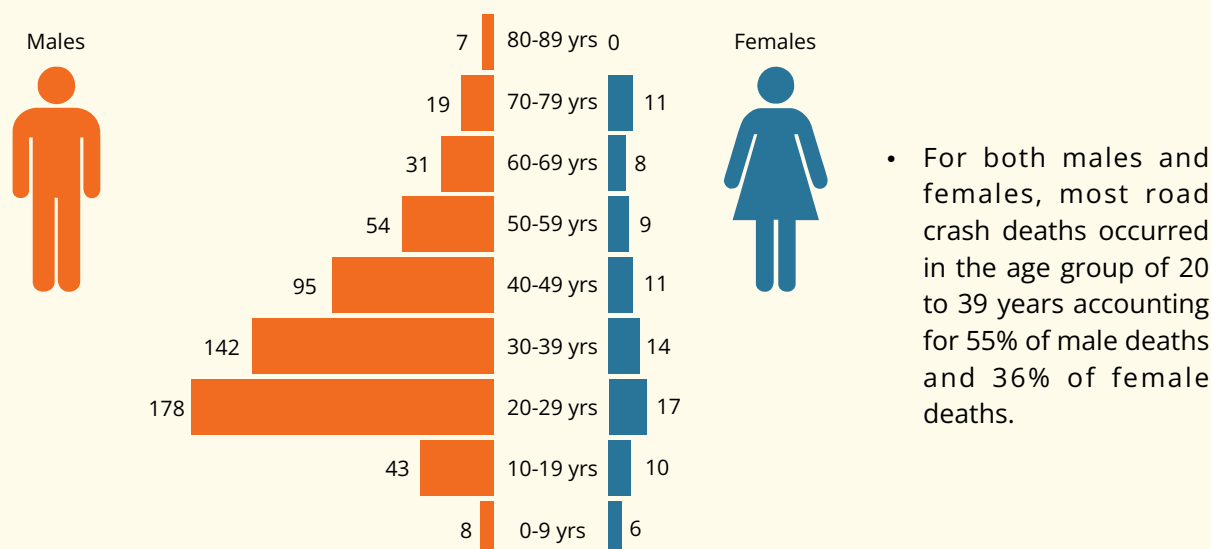


- Fifty six percent (385) of the total fatal crashes from 2022 to 2023 were hit-and-run crashes.
- The number of hit-and-run crashes decreased by 7% in 2023 (186) as compared to 2022 (199).

* Fatal crashes excluded for which hit-and-run status was unknown

3.5 Road Crash Deaths by Age and Gender of Victims

Figure 3.5.1: Road Crash Deaths by Age and Gender of Victims in Pimpri-Chinchwad, 2022-2023 (N=663)



3.5.2 Comparison of Road Crash Deaths by Age and Gender of Victims by Years in Pimpri-Chinchwad (2022-2023)

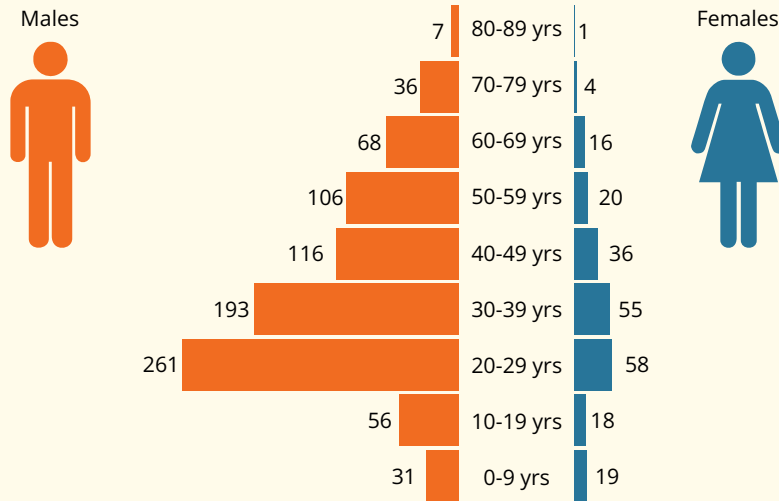
Table No.2: Comparison of Road Crash Deaths by Age and Gender of Victims by Years in Pimpri-Chinchwad (2022-2023)

Age Group	Male		Female	
	2022	2023	2022	2023
0-9	4	4	3	3
10-19	19	24	4	6
20-29	95	83	11	6
30-39	74	68	5	9
40-49	46	49	6	5
50-59	26	28	6	3
60-69	16	15	5	3
70-79	8	11	5	6
80-89	6	1	0	0
Total	294	283	45	41

- The number of road crash deaths across the age groups relatively stayed the same with slight increases or decreases from 2022 to 2023.

3.6 Road Crash Serious Injuries by Age and Gender of Victims

Figure 3.6.1: Road Crash Serious Injuries by Age and Gender of Victims in Pimpri-Chinchwad, 2022-23 (N=1101)



- For both males and females, most road crash serious injuries occurred in the age group of 20 to 39 years accounting for 52% of male and 50% of female seriously injured.

3.6.2 Comparison of Road Crash Serious Injuries by Age and Gender of Victims by Years in Pimpri-Chinchwad, 2022-2023

Table No.3: Comparison of Road Crash Serious Injuries by Age and Gender of Victims by Years in Pimpri-Chinchwad (2022-2023)

Age Group	Male		Female	
	2022	2023	2022	2023
0-9	14	17	5	14
10-19	23	33	9	9
20-29	114	147	23	35
30-39	92	101	25	30
40-49	54	62	15	21
50-59	49	57	12	8
60-69	33	35	8	8
70-79	16	20	3	1
80-89	1	6	1	0
Total	396	478	101	126

- The number of serious injuries increased among males and females by 20% and 35% respectively in the 20-39 years age group in 2023 as compared to 2022.
- Between 2022 and 2023 road crash injuries increased by 180% in young girls aged 0 to 9 years and by 43% in young boys aged 10-19.

3.7 Road User Interaction Matrix

Table No.4: Fatal Crash victims and Impacting Vehicles in Pimpri-Chinchwad, 2022-2023

Victim Road User	Impacting Vehicle								
	LMV	Powered two-wheeler	Bus	Heavy Vehicle	Bicycle	Single Vehicle Crash	Other	Missing	Total
Pedestrians	33	31	22	63	0	0	0	73	222
Cyclists	2	1	1	7	0	0	0	0	11
Powered two-wheeler	44	69	27	181	0	61	0	62	444
Vehicle Occupants	9	0	1	37	0	7	0	1	55
Others	0	0	0	1	0	0	0	0	1
Missing	0	0	0	0	0	0	0	0	0
Total	88	101	51	289	0	68	0	136	733

Heavy vehicle: Heavy Vehicles includes Tempo, Truck, Tractor, Lorry, JCB-Joseph Cyril Bamford, Construction Truck, Mixer

LMV: Light Motor Vehicle (Car/Jeep/Taxi/Van/SUV)

Powered two-wheeler: Geared motorbike, Gearless motorbike, Auto-Rickshaw Occupants, Pillion rider.

Vehicle Occupants: Road Users in Bus, Car/Jeep/Taxi/Van/SUV, Truck, Tempo, Tractor, Lorry

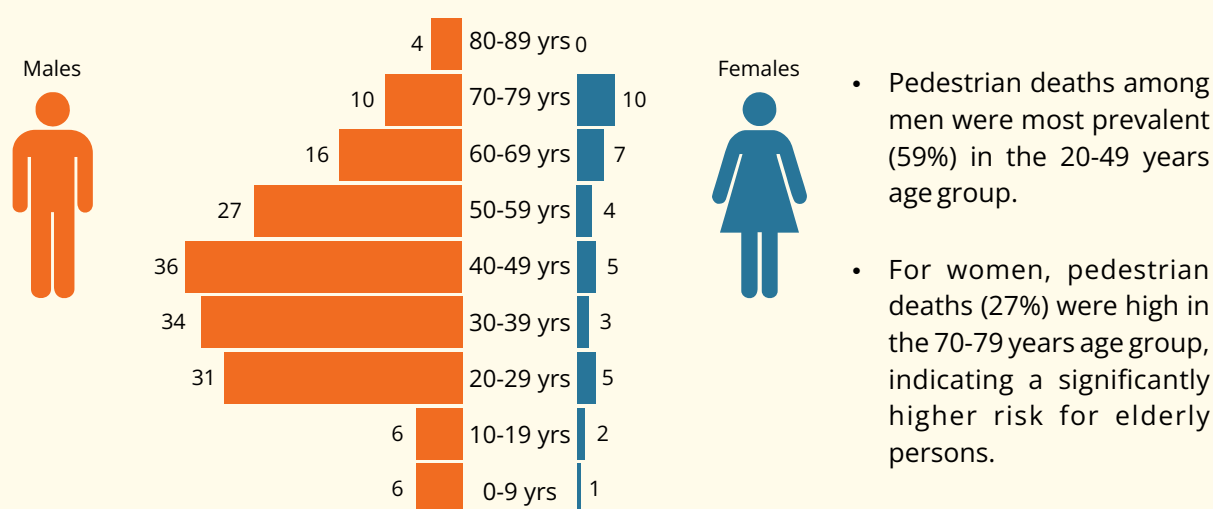
- This table presents the details of victim road users organized by the vehicles that impacted them (with impacting vehicles in columns and victim road users in rows).
- The majority of the road crash victims were powered two-wheelers (444) and pedestrians (222). They were primarily impacted by heavy vehicles (powered two-wheelers-41% and pedestrians-28%), light motor vehicles (Car/Jeep/Taxi/Van/SUV) (powered two wheelers-10%, pedestrians-15%), and powered two-wheelers (powered two-wheelers-16%, pedestrians-14%).
- Ninety percent of single vehicle crash deaths were powered two-wheelers. Majority (99%) of the impacting drivers were males and 53% of them belonged to the 20 to 39 year old age group.

Findings from the JH-IIRU's observational study:

- Forty two percent of powered two-wheelers, 29% of LMVs, and 17% of HMVs were observed exceeding speed limits.
- The majority of the powered two-wheeler riders either did not wear helmets (77%) or wore them incorrectly (1%).

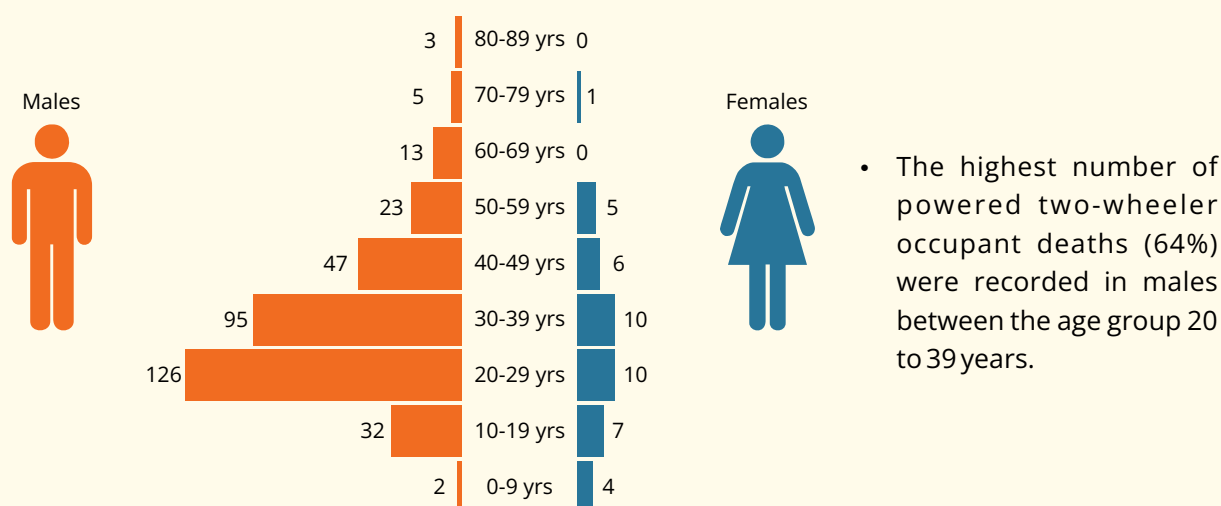
3.8 Pedestrian Deaths

Figure 3.8.1: Pedestrian Deaths by Age and Gender in Pimpri-Chinchwad, 2022-2023 (N=207)



3.9 Powered Two-Wheeler Occupant Deaths

Figure 3.9.1: Powered Two-Wheeler Occupant Deaths by Age and Gender in Pimpri-Chinchwad, 2022-2023 (N=389)

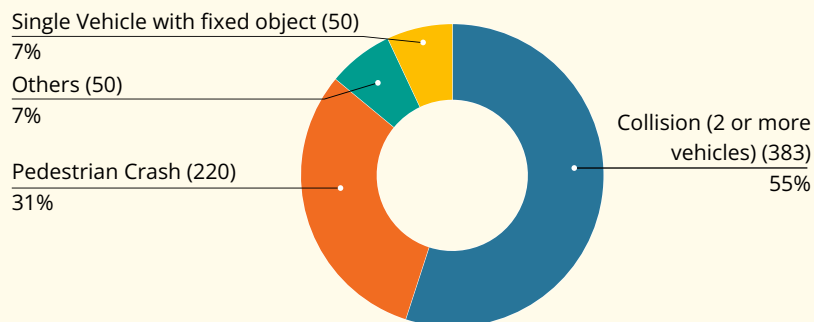


Findings from the JH-IIRU's observational study:

- No or incorrect helmet use was observed in 72% of powered two-wheeler riders aged 18 or older, and in 94% of riders under 18 (it's important to note that under 18 driving is not legally permitted in India).
- Nearly three-fourth of both male as well as female powered two-wheeler drivers either did not wear helmets or wore them incorrectly.

3.10 Fatal Road Crashes by Crash Type

Figure 3.10.1: Fatal Road Crashes by Crash Type in Pimpri-Chinchwad, 2022-2023 (N=703)



- The majority (55%) of the fatal crashes occurred due to collisions of two or more vehicles.
- Thirty-one percent of fatal crashes involved collision of vehicles with pedestrians. Pedestrian crashes decreased by 10% in 2023 (104) compared to 2022 (116).

3.11 Fatal Road Crashes by Time-of-Day and Days-of-Week

Table No.5: Distribution of Fatal Crashes by Time-of-Day and Days-of-week in Pimpri-Chinchwad, 2022-2023

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Grand Total
00:00-00:59	3	3	1	4	3	3	6	23
01:00-01:59	1	2	1	1	3	3	9	20
02:00-02:59	3	2	1	5	1	1	2	15
03:00-03:59	1	1	2	0	1	4	4	13
04:00-04:59	1	2	4	2	0	1	1	11
05:00-05:59	2	2	2	4	1	4	0	15
06:00-06:59	6	2	4	3	4	2	8	29
07:00-07:59	4	1	1	6	3	3	3	21
08:00-08:59	4	5	4	5	4	6	2	30
09:00-09:59	5	2	5	3	8	2	2	27
10:00-10:59	3	5	4	6	5	3	2	28
11:00-11:59	5	4	4	3	1	5	1	23
12:00-12:59	2	3	2	3	1	4	1	16
13:00-13:59	3	2	1	6	5	7	2	26
14:00-14:59	4	3	6	4	3	6	2	28
15:00-15:59	6	6	2	4	2	5	6	31
16:00-16:59	7	6	4	6	5	2	1	31
17:00-17:59	4	2	7	5	6	2	4	30

(Contd.)

Table No.5: Distribution of Fatal Crashes by Time-of-Day and Days-of-week in Pimpri-Chinchwad, 2022-2023

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Grand Total
18:00-18:59	6	4	4	5	6	4	6	35
19:00-19:59	9	9	10	3	6	8	5	50
20:00-20:59	10	8	6	6	9	8	10	57
21:00-21:59	9	7	10	4	9	8	7	54
22:00-22:59	5	10	2	8	7	7	8	47
23:00-23:59	3	9	6	3	13	2	7	43
Total	106	100	93	99	106	100	99	703

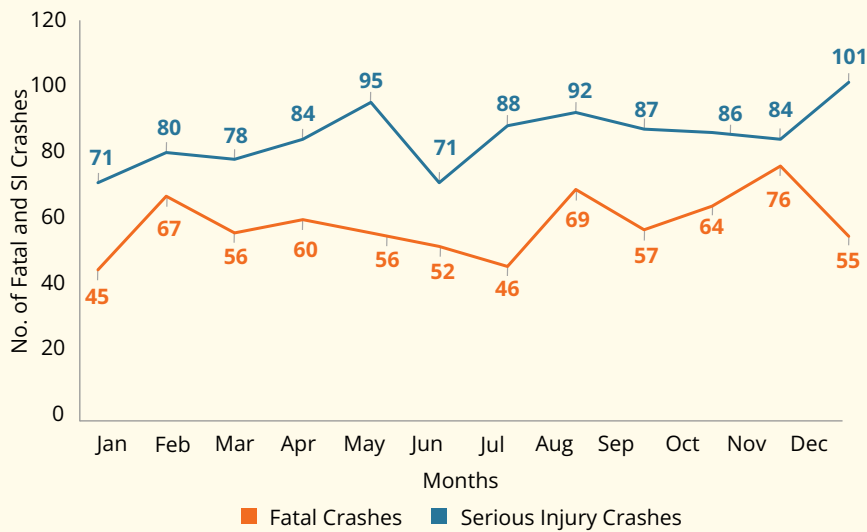
- A lot (36%, 251) of the fatal crashes were recorded during the late evening hours through midnight (i.e., 7pm to 12 am).

Findings from the JH-IIRU's observational study:

- Speeding prevalence remained relatively stable throughout the day
- Vehicles in free-flow conditions exhibited significantly higher speeds in the evening, with an average free-flow speed of 53 km/h compared to the overall daily average of 39 km/h among all vehicles.
- No helmet use was more prevalent in the evening (77%) compared to the morning (74%), suggesting a decline in compliance as the day progresses.
- Seatbelt use also varied, with higher compliance observed in the evening (72%) compared to the morning (61%), highlighting shifting enforcement throughout the day.

3.12 Distribution of Fatal and Serious Injury Crashes by Month, 2022-2023

Figure 3.12: Distribution of Fatal And Serious Injury Crashes by Month, 2022-2023



- The average number of fatal crashes per month was comparatively higher in February, August and November (71) than the remaining months (55) (potentially due to holidays and festive seasons).
- The average number of serious injury crashes were comparatively higher in May, August and December (96) (potentially due to holidays and festive seasons) than the remaining months.

3.13 Death Rate by Age Group

Figure 3.13.1: Death Rate by Age Group in Pimpri-Chinchwad, 2022 (N=339)

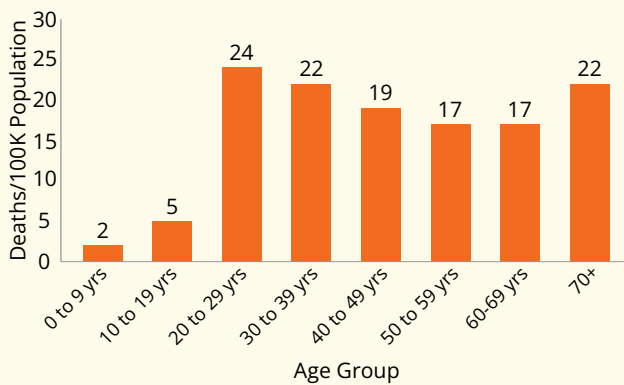
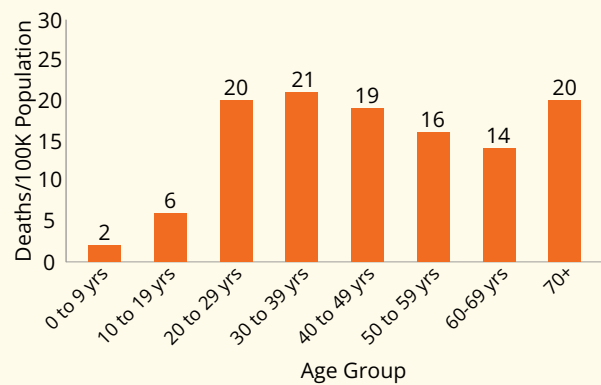


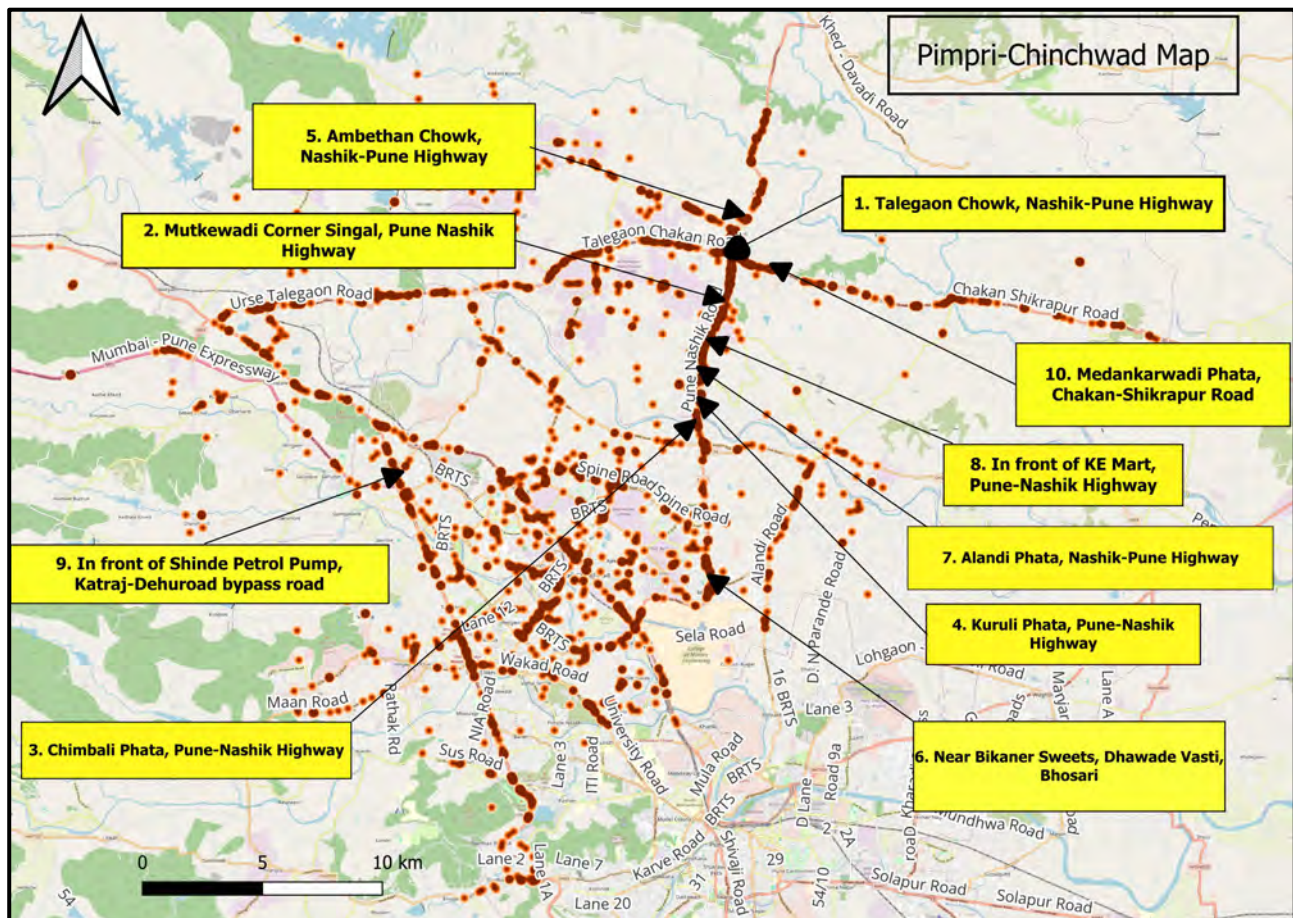
Figure 3.13.2: Death Rate by Age Group in Pimpri-Chinchwad, 2023 (N=324)



- Road crash death rate (i.e., deaths per 1 lakh population) decreased almost in all age groups in 2023 as compared to 2022.
- Overall, across both years, the death rate remained highest in both the younger (between 20 to 39 years) and older (above 70 years) population groups.

3.14. Spatial Distribution of Road Crashes

Figure 3.14.1: Heat Map of Fatal and Serious Injury Crashes, Pimpri-Chinchwad



The heatmap above gives a visual picture of high-risk locations throughout Pimpri-Chinchwad. In this map, the crash density is reflected in the “heat” or color ranging from light red (lower density of fatal and serious injury crashes) to dark red (higher density of fatal and serious injury crashes). Many road crashes were concentrated along Pune-Nashik highway, Talegaon-Chakan highway and Mumbai-Bangalore highway.

This heat map shows that many fatal and serious injury crashes occurred on arterial roads and expressways.

Complementary findings from the JH-IIRU's observational study:

- Speeding was most common on collector/local roads (53%),
- No or incorrect helmet use was observed on collector/local roads (63%), arterial roads (82%) and expressways (82%) among powered two-wheeler riders.
- Absence of seat-belt or child restraint use among car occupants was observed on collector/local roads (52%), expressways (48%), as well as arterial roads (26%).

3.14.2 Black Spots in Pimpri-Chinchwad

Table No.6: Black Spots in Pimpri-Chinchwad, 2022-2023

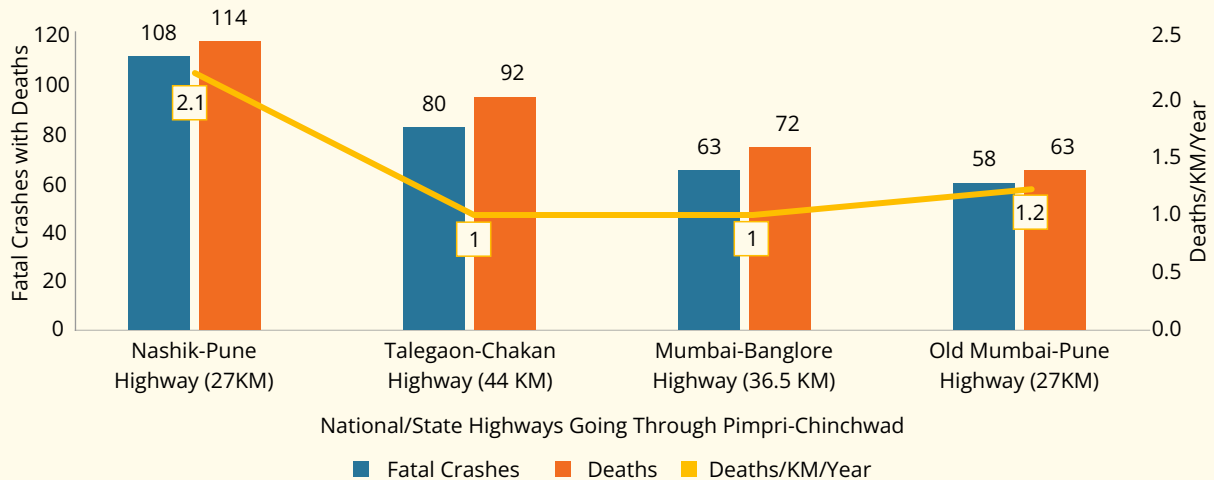
Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes (2022-2023)	Number of People died	Number of People Seriously Injured
1	1	Talegaon Chowk, Nashik Pune Highway, Chakan	18.755397	73.859046	10	10	20	10	10
2	2	Mutkewadi Corner Signal, Pune Nashik Highway	18.748023	73.85985	7	12	19	8	16
3	3	Chimbali Phata, Pune Nashik Highway	18.696601	73.847729	5	12	17	5	13
4	4	Kuruli Phata, Kuruli, Pune Nashik Highway	18.715181	73.8483	8	8	16	8	9
5	4	Ambethan Chowk, Nasik Pune Highway, Chakan	18.763103	73.861199	5	11	16	5	15
6	5	Near Bikaner Sweets, Dhawade Wasti, Bhosari, Pune Nashik Highway	18.632598	73.849958	5	9	14	5	15
7	6	Alandi Phata, Nashik-Pune Highway	18.731863	73.85643	5	8	13	5	9
8	7	In front of KE Mart, Pune Nashik Highway	18.742794	73.859327	2	10	12	2	12
9	8	In front of Shinde Petrol Pump, Katraj Dehuroad Bypass road, Pune	18.668249	73.727542	4	7	11	4	8
10	8	Medankarwadi Phata, Chakan, Chakan Shikrapur Road	18.749968	73.867908	3	8	11	3	9
11	9	Bhujbal Chowk, Mumbai-Banglore Highway, Pune	18.591907	73.757125	6	4	10	6	4
12	9	Chinchwad Chowk, Old Mumbai-Pune Highway, Chinchwad	18.638524	73.795057	3	7	10	4	6
13	10	Spicer Chowk, Pune Nashik Highway	18.728662	73.854964	5	4	9	4	4
14	10	Tilak Chowk, Near Nigdi Bus stop, Nigdi	18.659043	73.777399	3	6	9	3	7
15	10	Kalewadi Chowk, Aundh Ravet BRTS Road, Wakad	18.603494	73.777012	3	6	9	3	6
16	10	Near phuge prima, Savvidhan chowk,Bhosari, Nashik Pune Highway	18.621109	73.850986	3	6	9	3	6

(Contd.)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes (2022-2023)	Number of People died	Number of People Seriously Injured
17	11	Bharat Mata Chowk, Moshi, Pune Nashik Highway	18.679318	73.84917	7	1	8	7	1
18	11	In front of Indrayani Pure Veg, Old Mumbai-Pune Highway, Talegaon Dabhade, Pune	18.698824	73.697428	5	3	8	6	4
19	11	In front of Aundh Hospital, Near Sangavi Phata, Aundh Wakad Road, Sangavi	18.575936	73.804287	6	2	8	6	2
20	11	Near Bhamboli Phata, Chakan Road, Mhalunge	18.786998	73.777382	5	3	8	5	5

Based on the Ministry of Road Transport and Highways (MoRTH) definition of a blackspot, the top 20 black spots were identified. A blackspot is defined as a location where 5 or more fatal and serious injury crashes had occurred within 500 meters stretch of a junction and mid-block during 2022 and 2023. Areas such as Talegaon Chowk, Mutkewadi Corner signal, Chimbali phata recorded a large number of fatal and serious injury crashes with deaths and injuries during years 2022 and 2023.

Figure 3.14.3: High Risk Corridors in Pimpri-Chinchwad, 2022-2023



The highest number of fatal crashes (108) and road crash deaths (114) were registered on Nashik-Pune highway (27 KM). Moreover, the same highway recorded the highest death rate (2.1 deaths/km/year) compared to other highways. These corridors represent high potential to save lives with appropriate interventions.

3.15 Summary of Key Findings:

- **Trend of crashes**

- Both fatal crashes and road crash deaths slightly decreased by 3% in 2023 as compared to 2022.
- Serious injury crashes increased by 14% in 2023 as compared to 2022.

- **Vulnerable road users**

- Powered two-wheeler occupants and pedestrians contributed to 89% of road crash deaths and 85% of road crash serious injuries.

- **Vulnerable age groups**

- Men aged 20-39 years contributed to 55% of road crash deaths and 52% of road crash injuries.
- The death rate was high among those aged 70 and above.

- **Hit-and-run crashes**

- Fifty Six percent of fatal crashes were hit-and-run crashes.
- The number of hit-and-run crashes increased by 7% in 2023 compared to 2022.

- **Crashes by day and time**

- Thirty six percent of fatal crashes occurred during evening hours to midnight (7pm to 12am).

- **High risk corridors**

- Twenty seven percent of fatal road crashes occurred on Nashik-Pune highway (15%) and Talegaon-Chakan highway (12%).

- Nashik-Pune highway recorded the highest death rate (2.1 deaths/km/year) compared to other highways.
- **Top blackspots**
 - Areas such as 'Talegaon Chowk, Mutkewadi Corner signal and Chimbali Phata' recorded the highest number of fatal and serious injury crashes during 2022 and 2023.
- **Speeding, helmet use, and seat-belt/child restraint use:**
 - Powered two-wheelers had the highest prevalence of speeding (42%), compared to other vehicle types.
 - Speeding was primarily common on arterial roads (30%) and expressways (23%).
 - The majority of the powered two-wheeler riders either did not wear helmets (77%) or wore them incorrectly (1%).
 - No or incorrect helmet use was observed in 78% of the powered two-wheeler occupants on collector/local roads, arterial roads and expressways.
 - Absence of seat-belt or child restraint use among car occupants was observed on both arterial roads (52%) as well as expressways (48%).

3.16 Recommendations:

Recommendation 1: Prioritize high-risk locations and corridors

Given constraints in resources, prioritizing high-risk locations is cost-effective and can drastically reduce crash deaths and serious injuries. The immediate next step after the publication of this report should be conducting further investigations in the identified high-risk locations to conduct road safety inspections, understand specific issues, and to design targeted interventions.

Recommendation 2: Reduce speeding through infrastructure interventions

Speeding is a primary cause of road crash deaths in powered two-wheelers and pedestrians. Powered two-wheelers had the highest prevalence of speeding (42%), compared to other vehicle types. Speed calming measures can effectively and significantly reduce road crash deaths. These measures may include the construction of raised intersections, installation of roundabouts, and implementation of speed humps and rumble strips.

Recommendation 3: Strict enforcement of speed limit laws supplemented by communications campaigns

Speed limit compliance through a combination of manual and automated speed enforcement should also be the priority of the police. Alongside enhanced enforcement, it is recommended to inform the public about the penalties and ongoing enforcement activities related to speeding. In the future, mandatory installation of speed limiters especially for impacting

vehicles such as heavy vehicles should also be explored.

Recommendation 4: Strictly enforce and implement helmet-clasping law to reduce powered two-wheeler deaths.

Helmet-clasping can drastically reduce the risk of a powered two-wheeler death by 28 to 73% (Johns Hopkins School of Public Health). Given that 59% of the total deaths were powered two-wheelers in 2022 and 2023, with 77% of riders either not wearing helmets or wearing them incorrectly (1%), it is crucial to strictly enforce the helmet-clasping law.

Recommendation 5: Improve pedestrian safety and accessibility especially of the elderly (sidewalks, raised crossings, other pedestrian infrastructure).

The road crash deaths decreased by 9% among pedestrians in 2023, compared to 2022 and the elderly contributed 23% in the total pedestrian deaths. This underscores the importance of specific interventions for pedestrian safety such as having safe, accessible pedestrian facilities, including wide, obstruction-free footpaths, raised crossings, and safely designed pedestrian and school zones. The focus should be on high-risk areas, especially near schools, railway stations, and commercial and residential zones.

Recommendation 6: Build safe, reliable, and accessible public transportation infrastructure

Most crash deaths in Pimpri-Chinchwad occur in privatized modes of transport such as powered two-wheelers (56%). Building well-connected and integrated public transportation options will enable people to shift from private vehicles to public transport which effectively reduces exposure on the road. This shift will not only reduce the number of deaths and injuries but will also have multiple benefits to the city's economy, environment, and overall quality of life.

Recommendation 7: Improve data quality (inclusion of key indicators in the FIRs, establishment of a crash analysis team, scale-up of eDAR).

Explore the inclusion of additional details and indicators such as age and gender, and incomplete details regarding the circumstances that led to the crash. A crash analysis team who can gather and digitize FIRs as well as produce routine road safety reports should also be established within the police. The police should also work with the NIC to scale-up the use of eDAR in the city and gain access to line list data from eDAR so it can be used for analysis.

Recommendation 8: Organise and follow-up on collection of fines

Aside from the enforcement of laws, it would be important to ensure that fines are strictly collected. This would involve establishing mechanisms to adequately process violations, follow-up on fines, and integration of licensing, vehicle registration, and law violations datasets. The implementation of the law without the collection of fines, enables road users to disobey the law as it has no effect.

ANNEXURE

**PIMPRI-CHINCHWAD
BLACK SPOTS**

Annexure-1 List of Black Spots of Pimpri-Chinchwad (2022-2023)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes	Number of People died	Number of People Seriously Injured
1	1	Talegaon Chowk, Nasik Pune Highway, Chakan	18.755397	73.859046	10	10	20	10	10
2	2	Mutkewadi Corner Signal, Pune Nashik Highway	18.748023	73.85985	7	12	19	8	16
3	3	Chimbali Phata, Pune Nashik Highway	18.696601	73.847729	5	12	17	5	13
4	4	Kuruli Phata, Kuruli, Pune Nashik Highway	18.715181	73.8483	8	8	16	8	9
5	4	Ambethan Chowk, Nasik Pune Highway, Chakan	18.763103	73.861199	5	11	16	5	15
6	5	Near Bikaner Sweets, Dhawade Wasti, Bhosari, Pune Nashik Highway	18.632598	73.849958	5	9	14	5	15
7	6	Alandi Phata, Nasik-Pune Highway	18.731863	73.85643	5	8	13	5	9
8	7	In front of KE Mart, Pune Nashik Highway	18.742794	73.859327	2	10	12	2	12
9	8	In front of Shinde Petrol Pump, Katraj Dehuroad Bypass road, Pune	18.668249	73.727542	4	7	11	4	8
10	8	Medankarwadi Phata, Chakan, Chakan Shikrapur Road	18.749968	73.867908	3	8	11	3	9
11	9	Bhujbal Chowk, Mumbai-Banglore Highway, Pune	18.591907	73.757125	6	4	10	6	4
12	9	Chinchwad Chowk, Old Mumbai-Pune Highway, Chinchwad	18.638524	73.795057	3	7	10	4	6
13	10	Spicer Chowk, Pune Nashik Highway	18.728662	73.854964	5	4	9	4	4
14	10	Tilak Chowk, Near Nigdi Bus stop, Nigdi	18.659043	73.777399	3	6	9	3	7
15	10	Kalewadi Chowk, Aundh Ravet BRTS Road, Wakad	18.603494	73.777012	3	6	9	3	6
16	10	Near phuge prima, Sawidhan chowk,Bhosari, Nashik Pune Highway	18.621109	73.850986	3	6	9	3	6
17	11	Bharat Mata Chowk, Moshi, Pune Nashik Highway	18.679318	73.84917	7	1	8	7	1

(Contd.)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes	Number of People died	Number of People Seriously Injured
18	11	In front of Indrayani Pure Veg. Old Mumbai-Pune Highway, Talegaon Dabhade, Pune	18.698824	73.697428	5	3	8	6	4
19	11	In front of Aundh Hospital, Near Sangavi Phata, Aundh Wakad Road, Sangavi	18.575936	73.804287	6	2	8	6	2
20	11	Near Bhamboli Phata, Chakan Road, Mhalunge	18.786998	73.777382	5	3	8	5	5
21	11	In front of Dehu Road Police Station, Old Mumbai- Pune Highway, Pune	18.68635	73.721885	1	7	8	2	8
22	11	Near Sant Tukaram Nagar Metro Station, Old Mumbai- Pune Highway, Pimpri	18.614579	73.815681	2	6	8	2	6
23	11	Finolex Chowk, Old Mumbai-Pune Highway, Pimpri	18.629688	73.802692	1	7	8	1	8
24	12	Talegaon Station Chowk, Talegaon Station road, Talegaon Dabhade, Pune	18.732723	73.673735	0	7	7	0	8
25	12	In front of Torna Hotel, Mumbai- Bangalore highway, Pune	18.636258	73.740167	5	2	7	6	9
26	12	Waki Phata, Waki Budruk, Pune Nashik Highway	18.810373	73.873992	5	2	7	6	2
27	12	In front of Mahindra Gate 2 and 3, Talawade Chakan Road, Chakan	18.722676	73.796211	4	3	7	4	3
28	12	In front of Bhosari Vahatuk Vibhag, Near Nashik Phata, Bhosari, Pune Nashik Highway	18.612702	73.824176	2	5	7	3	8
29	12	In front of MY CAR Showroom, Pune Nashik Highway	18.721798	73.851598	2	5	7	2	6
30	12	In front of New Balaji Traders, Talegaon Chakan road, Talegaon Dabhade, Pune	18.734515	73.687929	1	6	7	1	7
31	13	Near Mahindra Logistic ltd, Sudhavadi, Talegaon- Chakan Road, Talegaon Dabhade	18.739192	73.747092	6	0	6	6	0

(Contd.)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes	Number of People died	Number of People Seriously Injured
32	13	Near Hotel Vaishnav Inn, Talegaon-Chakan Road, Talegaon Dabhade, Pune	18.737717	73.726642	5	1	6	5	4
33	13	Near Shri Sant Tukaram Maharaj Entry gate, Old Mumbai-Pune Highway, Dehu Road	18.678775	73.741325	4	2	6	5	3
34	13	Sudarshan Chowk, Pimple-Saudagar Road, Sangavi	18.59935	73.812056	5	1	6	5	3
35	13	Near Hotel Tiranga, Kadachiwadi, Chakan Shikrapur Road	18.748198	73.876263	4	2	6	5	3
36	13	Main Moshi Gaon Chowk, Moshi, Pune Nashik Highway	18.67692	73.849746	4	2	6	4	3
37	13	Somatane Phata, Old Mumbai Pune Highway, Talegaon Dabhade, Pune	18.702899	73.687705	3	3	6	3	4
38	13	Nashik Phata, Old Mumbai-Pune Highway, Pune	18.606911	73.822182	3	3	6	3	3
39	13	In front of Tata Motors Cars Service centre, Nashik Pune Highway, Chakan	18.778808	73.871339	3	3	6	3	3
40	13	Rohkal phata, Nashik Pune Highway, Chakan	18.791026	73.867725	3	3	6	3	5
41	13	In front of Awate Lawns, Shelgaon, Chakan Shikrapur Road	18.733741	73.933125	3	3	6	3	3
42	13	Near Bharat Petrol Pump - Devendra Autolines, Pune Nashik Highway	18.737673	73.857788	3	3	6	3	5
43	13	Indrayani Bridge, Pune Nashik Highway	18.689008	73.846394	3	3	6	3	5
44	13	In front of Sayaji Hotel, Mumbai-Bangalore Highway, Pune	18.599549	73.75445	2	4	6	2	4
45	13	In front of Rangla Punjab Hotel, Mumbai-Bangalore Highway, Pune	18.542796	73.776638	2	4	6	2	7
46	13	Chandni Chowk, Near ST Bus stop, Mumbai-Bangalore Highway, Pune	18.507342	73.782376	2	4	6	2	4

(Contd.)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes	Number of People died	Number of People Seriously Injured
47	13	Near Kores India ltd, Talegaon Chakan Road, Chakan	18.759932	73.826103	2	4	6	2	4
48	13	Mukai Chowk, Under bridge, Ravet, Pune	18.660145	73.730557	1	5	6	1	6
49	13	Near Bajaj Auto Chakan Plant, Talegaon Chakan Road, Mhalunge	18.754632	73.802364	1	5	6	1	7
50	13	Near Dr D Y Patil Hospital, Yashwantrao Chavan Road, Bhosri MIDC	18.624181	73.818687	1	5	6	1	8
51	14	Limb Phata/Talegaon Phata, Old Mumbai-Pune Highway, Talegaon Dabhade, Pune	18.7153	73.675284	0	5	5	0	6
52	14	Mankar Chowk, Kaspate Vasti, Aundh Wakad Road, Wakad	18.589985	73.773234	0	5	5	0	6
53	14	In front of Hotel Sai Sagar, Pune Nashik Highway	18.705903	73.848007	0	5	5	0	5
54	14	Near Ozarde, Mumbai-Pune Expressway	18.706673	73.599092	3	2	5	6	5
55	14	In front of Hotel Shivraj, Mumbai-Banglore Highway, Pune	18.654259	73.732863	4	1	5	4	1
56	14	In front of Indian Oil Swagat Petrol Pump, Kharabwadi, Talegaon Chakan road, Chakan	18.758921	73.834394	4	1	5	4	4
57	14	Panjarpol Goshala, Bhosari, Pune Nashik Highway	18.64167	73.850728	4	1	5	4	2
58	14	In front of ARAI- Homologation and Technology Center, Volkswagen Road, Chakan	18.741776	73.833057	3	2	5	3	3
59	14	In front of Maharashtra Natural Gas ltd CNG Pump, Phugewadi, Old Mumbai-Pune Highway, Bhosari	18.585236	73.83336	3	2	5	3	2
60	14	Near Vijay Nagar BRT Bus stop, Kalewadi Road, Wakad	18.623208	73.791684	3	2	5	3	2
61	14	Near Dhere Patil Subway, Aundh Wakad Road, Sangavi	18.569715	73.809419	3	2	5	3	2

(Contd.)

Sr. No	Rank	Name of Location	Latitude	Longitude	Number of Fatal Crashes	Number of Serious Injury Crashes	Total Fatal and SI Crashes	Number of People died	Number of People Seriously Injured
62	14	PMPML Bus Stop, Bhosari Gaothan, Nashik Pune Highway	18.623331	73.851201	3	2	5	3	2
63	14	In front of Tata Communications Limited Corner, Dighi, Alandi Road	18.609466	73.873257	3	2	5	3	4
64	14	In front of Thanda Mamla Hotel, Old Mumbai-Pune Highway, Talegaon Dabhade, Pune	18.717597	73.6723	2	3	5	2	5
65	14	Yelwadi, Dehu Yelwadi Road, Mhalunge	18.73307	73.757736	2	3	5	2	4
66	14	In front of Hotel Mayur Misal, Indrayani Nagar Road, Bhosari	18.631933	73.837085	2	3	5	2	3
67	14	In front of Hotel Ranwara, Chakan-Ambethan Raod, Biradwadi, Chakan	18.771989	73.844778	2	3	5	2	3
68	14	Santoshnagar Bham Phata, Nashik Pune Highway	18.800247	73.869897	2	3	5	2	3
69	14	In front of Bitwise Solution Pvt Ltd, Mumbai-Banglore Highway, Pune	18.557077	73.770124	1	4	5	1	4
70	14	Laxmi Chowk, Marunji Road, Hinjewadi, Pune	18.599673	73.734668	1	4	5	1	4
71	14	In front of Shreya lawns, Talegaon Chakan Road, Chakan	18.755188	73.854222	1	4	5	1	7
72	14	Savidhan Chowk, Spine Road, Chikhali	18.668858	73.791894	1	4	5	1	4
73	14	Durga Chowk, Yamuna Nagar, Nigdi, Pune	18.664245	73.786623	1	4	5	1	6
74	14	Near Shah Petrol Pump, Ektaagar, Nahik Pune Highway, Chakan	18.774992	73.869921	1	4	5	1	4

