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Factors of Accident on Panipat-Samalakha Section of NH-1

Kuldeep[1] and Ajit Singh[2]

[1]M. Tech. Scholar, Department of Civil Engineering,
CBS Group of Institutions, Jhajjar, Haryana (India)
[2]Assistant Professor, Department of Civil Engineering,
CBS Group of Institutions, Jhajjar, Haryana (India)

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Abstract

Road safety is one of the most important problems in our society. Road crashes take away the life causing fatalities around 4,500 people every day. This is a global humanitarian disaster, and it is man-made. (Global Road Safety Partnership Annual Report 2014).[The present traffic condition on road is extremely heavy and has almost reached the capacity of the road. Every year 1.2 million of people are killed and between 20 and 50 million people are injured in road accidents. If current trends continue than road traffic accidents in India are predicted to be third leading contributor to the global burden of Disease and injury by 2020. Road users in India are heterogeneous in nature, ranging from pedestrians, animal- driven carts, bi-cycles, rickshaws, hand carts and tractor trolleys, to various categories of two/three wheelers, motor cars, buses, trucks, and multi-axle commercial vehicles etc. National highways of India are only 2% of the total road network but carries about 40 percent of the total road traffic. It influenced in increase of the number of vehicles and road accidents. It is surprising to know that India has only 1 % of the total world's vehicles which accounts for 16% of the total world's accidental deaths.

Keywords: *NH-1, Factors of Accident, Panipat, Samalakha.*

Introduction

Panipat, the city of Weaver's situated in north India which is connected to the capital of India, New Delhi and 90Km far towards north located on busiest National Highway-1. Being as an oldest city of haryana state with varied heritage and culture and even had a glorious past. The battle of Mahabharata is quite connected with this city. Three major battles were fought at this place in 1526, 1556 and 1761. Panipat district has significant place in international market for **"Handloom products." It is also the biggest centre for shoddy yarn in the** world.

Road Accidents Scenario in India

In India only 2% of road length of national highways out of total road length to accommodate 40% of the total traffic on Indian roads which shows steep increase in number of road accidents fatalities in India. Between 1970 to 2014, the number of road accidents increased by 4.3 times with more than 7 fold increase in injuries and about 8.7 times increase in fatalities in the backdrop of about 3 fold increase in road network which is alarming. Around 56 road accidents take place every hour in which 14 deaths occurs on roads in India. There is a great need to take up measures that can help improve road safety in the country.
The road accident data in India during 2012-2016

Between 1970 and 2014 Number of road accidents increased by 4.3 times accompanied with 9.5 times increase in road accidents fatalities and 7.3 times increase in the number of persons injured in road accidents in India.

In 2015, India recorded 4,86,476 road accident deaths highest in the world. Of this, about 25.2 per cent (1,22,589) were fatal accidents. The number of persons killed in road accidents were 1,37,572 i.e. an average of one fatality per 3.5 accidents. Trends of reported road accidents are given. The proportion of fatal accidents in total road accidents has consistently increased since 2003 from 18.1 per cent to 25.2 per cent in 2017.(Indian Statistical Report,2017)

As Carelessness in various manner results that NHs are responsible for causing about 40% of fatalities on Indian roads. The present study has been undertaken to identify and suggest remedies for the accident prone locations on road stretch from Panipat Toll Plaza to Samalkha Flyover End Point of NH-1.

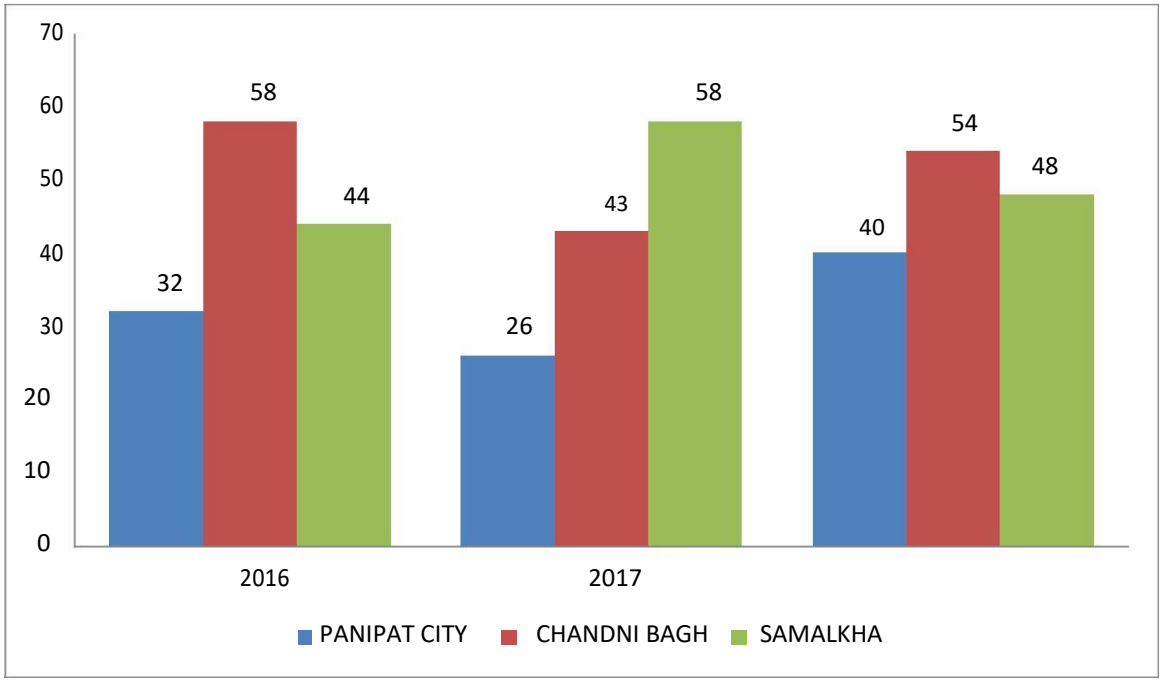
Results and Discussions

Accident Rate (2017-2018)

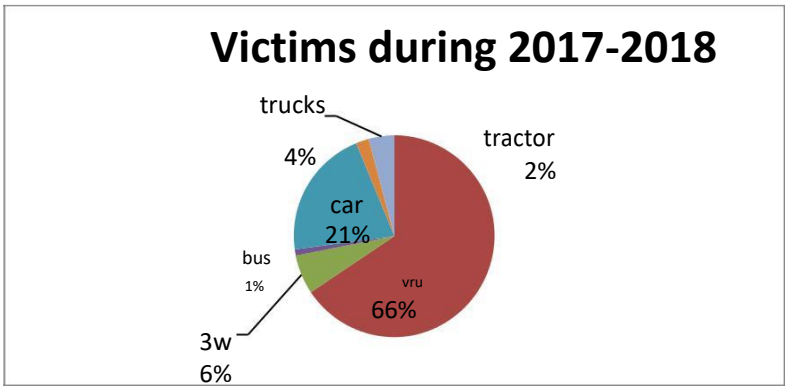
Name of the stretch	Length	Police Station	Number of Accidents					
			Total Accident			Accident Rate		
			2013	2014	2015	2013	2014	2015
Toll Plaza to Sanjay Chowk	5.4 Km	Panipat City	**32**	**26**	**40**	**5.92**	**5.81**	**7.40**
Sanjay Chowk to Police Line	8 Km	Chandani Bagh	**58**	**43**	**54**	**7.25**	**5.37**	**6.75**
Police Line to Samalkha Chokker Petrol Pump	12 Km	Samalkha	**44**	**58**	**48**	**3.66**	**4.84**	**4.0**

Annual Variations in Accidents

The annual variation in accidents of total stretches during year 2016-2018.It is observed that percentage accidents are increasing relatively in most of the year. In the year 2018 accident rate was high and low in the year 2016.It may be due to increase in no of vehicles, bad traffic environment, and increase in population.



Victims: Victims due to hitting of vehicles during 2013-2015 in Panipat City are shown in pie chart in percent. The results indicate that 55 percen**t are VRU's followed** by 21 percent by Car users, 6 percent are 3wheelers, 4 percent are Truck users, 2 percents are Tractors and 1 percent are bus users as shown:



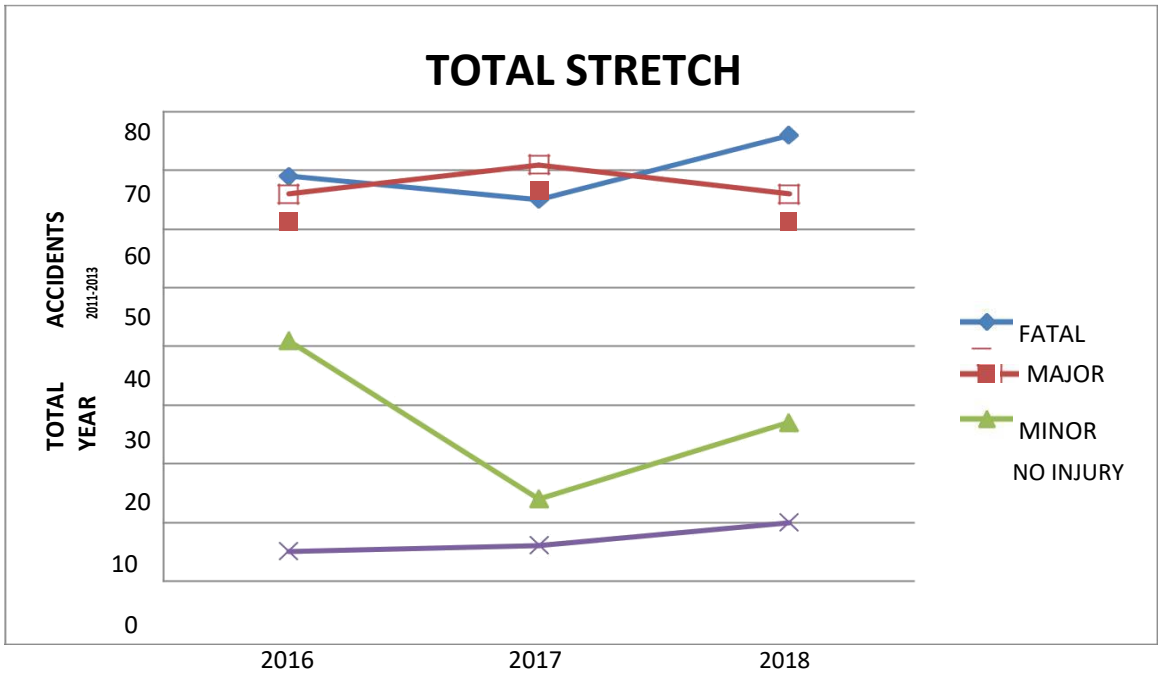
Victims during 2017-2018 Stretch -(Panipat City)

Collision Types and Crash Severity Statistics

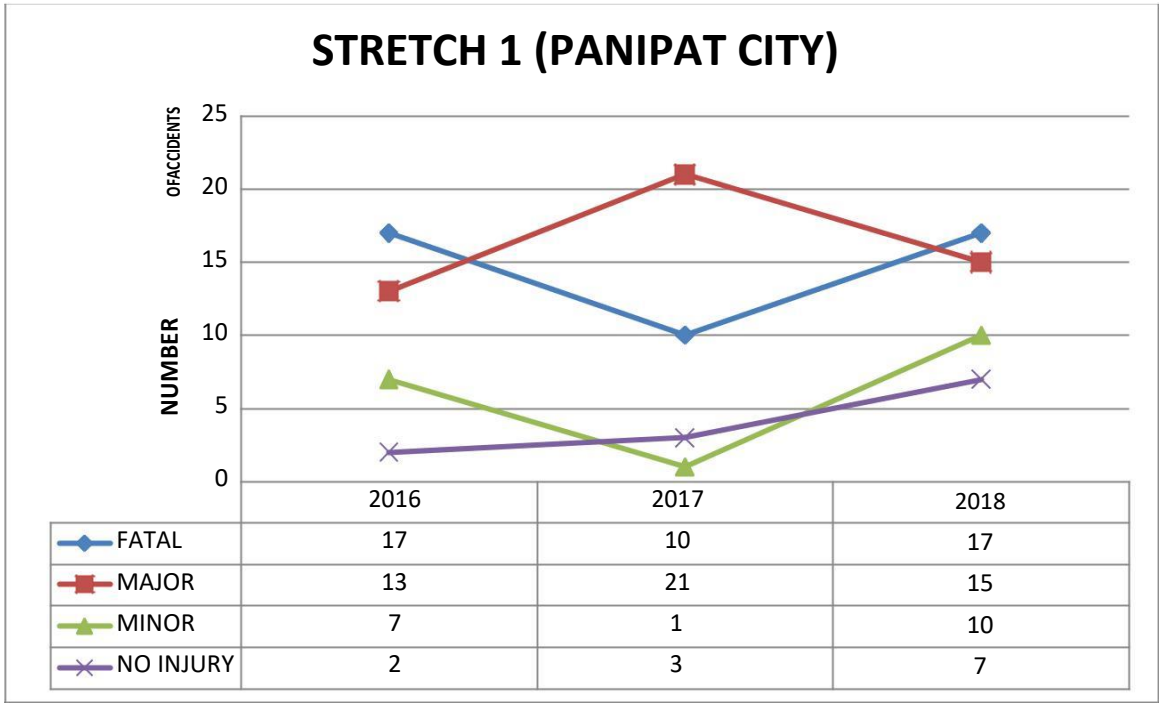
Collision type-severity statistics for Panipat city (2017-2018). Rear-End crash is the most dominant collision type. Sixty Three Rear-End crashes were recorded which constituted 52% of the 121 crashes obtained in 3-year. Eighteen of the Rear-End crashes resulted in fatalities. This represents 43.90% of the 41 fatal crashes for the period. Similarly, 27 of the 49 major injuries crashes were rear-end collisions representing 55.10% of the total.

Crash Statistics (2017-2018) – Panipat City

Collision Types	Crash Severity				
	No Injury	Minor	Major	Fatal	Total
Crossing	0	3	6	13	22
Head-On	2	1	9	1	13
Overtaking	0	0	0	1	1
Overturned	0	0	1	1	2
Rear-End	9	9	27	18	63
Side-Swipe	0	4	0	0	4
T-Point	1	0	0	0	1
U-Turn	0	0	2	0	2
Wrong Side	0	2	2	0	4



Types of Injuries in total stretch



	2016	2017	2018
FATAL	17	10	17
MAJOR	13	21	15
MINOR	7	1	10
NO INJURY	2	3	7

Conclusion

Based on the results of this study, the following may be drawn:

1. Road traffic crash numbers on various sections found increasing.
2. The Sanjay Chowk to Police Line (Chandni Bagh) section is the major contributor to the increase in crashes.
3. The fatality rate in Stretch-1, Stretch-2, and Stretch-3 are 34%, 49% and 37% respectively.
4. Major Black spot locations identified during analysis are Nangal Kheri, Siwah, Police line, Chokker Petrol Pump, Manana Mor and Toll Plaza.
5. Rear end collision and collision during crossing are the main causes of accident at Bus Stand Panipat, Nangal-Kheri, Siwah and Police line.
6. Head-On collision is the main cause of accident at Chokker petrol pump and Manana Mor.
7. Rear-end collisions are more in Panipat area (Stretch-1) and Chandnibagh area (Stretch-2) and the percentage of crashes due to Rear-End collisions in Stretch-1 and Stretch-2 is 52% and 59% respectively.
8. Head-on collisions are more in Samalkha area (Stretch-3) with percentage of total crashes as high as 48%.

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