

STUDY OF ROAD SAFETY AUDIT IN VIDISHA RANGAI TO AHMEDPUR TRIHAHA AS PER IRC-88

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ABSTRACT

Mishaps are a channel on the public economy and may prompt disablement, passing, harm to wellbeing and property, social misery and general corruption of climate. To limit the no of accidents by any sort and seriousness expected to happen on the substance during a particular period is known as street security. Mishaps and the fatalities on street are the consequence of between play of various variables. Street clients in India are heterogeneous in nature, going from walkers, creature driven trucks, bi-cycles, carts, pushcarts and farm hauler streetcars, to different classifications of two/three wheelers, engine vehicles, transports, trucks, and multi-pivot business vehicles and so on, The vehicle populace has been consistently expanding a result of progress in the way of living of individuals. Expansion in vehicle populace with restricted street space utilized by an enormous assortment of vehicles has elevated the need and criticalness for a thoroughly examined strategy on the issue of street wellbeing. In India the pace of mishap is straightforwardly corresponding to development of vehicle populace.

Stretch I have the second most elevated no of mishaps represents 32.5% of complete mishap. The Mishap rate can be diminished by giving signalized intersection, intersection improvement, and shoulder Freedom, establishment of mounds, moving of shafts, evacuation of trees close to the edge of asphalt and so forth. No of mishaps in stretch II records for 29.6% of absolute mishaps. The mishap rate can be Limited by tidying up shoulders, lessening speed limit, intersection improvement, giving Signs on the middle, moving designs on the shoulder. Stretch III has least no of mishaps represents 3.7% of complete mishaps. Speed limit decrease close to intersection ought to be diminished to forestall mishap.

Keywords: Street Wellbeing, Vulnerable Sides, Mishap Expectation Model.

I. INTRODUCTION

Overview

According to MORTH-2018 states 467 k total road accidents YOY 2011 to 2018 in India placing the country with highest number of accidents in the World. Accident Severity has been increasing year by year. A road accident is an unplanned and uncontrolled occasion, which happened on a road open to an open activity bringing about individual harm, harms to the property and death toll in which no less than one moving vehicle was included. Rapid growth of population coupled with increased economic activities has favored in tremendous growth of motor vehicles. This is one of the primary factors responsible for road accidents. It is observed that few works have been carried out on statistical analysis of accidents particularly on Highways.

Road safety is one of the most important problems in our society. 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 road traffic accidents are predicted to be third leading contributor to the global burden of Disease and injury.

India had earned the dubious distinction of having more number of fatalities due to road accidents in the world. Road safety is emerging as a major social concern around the world especially in India.

Accidents are a drain on the national economy and may lead to disablement, death, damage to health and property, social suffering and general degradation of environment. To minimize the no of crashes by any kind and severity expected to occur on the entity during a specific period is known as road safety. Accidents and the fatalities on road are the result of inter-play of a number of factors. 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., The vehicle population has been steadily increasing because of change in the style of living of people. Increase in vehicle population with limited road space used by a large variety of vehicles has heightened the need and urgency for a well thought-out policy on the issue of road safety. In India the rate of accident is directly proportional to growth of vehicle population.

Black Spot

In road safety management, an accident blackspot or black spot is a place where road traffic accidents have historically been concentrated. It may have occurred for a variety of reasons, such as a sharp drop or corner in a straight road, so oncoming traffic is concealed, a hidden junction on a fast road, poor or concealed warning signs at a cross-road.

At each section, potential black spots along the section were identified based on the geometry of the road within that section, environmental factors, and also the 9 factors mentioned above. Unfortunately, due to high unemployment rate, many people go for gas oil and goods (cloths, food stuff, etc.) smuggling to be able to afford life expenses. Meanwhile, high speed of smuggling vehicles, particularly those used to transport gas oil, has resulted in disastrous accidents upon which a large number of casualties has been incurred. Potential black spots along Sections.



Figure 1: Blind curve

Objectives of the Study

- 1 To determine the flaws in selected road.
- 2 To justify the blind spots and provide its rectifications.
- 3 To provide road safety features in selected case study for vidisha.
- 4 To Analyze the selected road and connecting junctions.

II. LITERATURE REVIEW

Bhupendra Singh; Ankit Gupta 2021“Recent trends in intelligent transportation systems: a review” The author presented four major parts of ITS (Intelligent Transportation System) i.e., Advanced Traveler Information System (ATIS), Advanced Traffic Management System (ATMS), Advanced Public Transportation System (APTS), and Emergency Management System (EMS) with a primary objective to study various ITS architecture and model and review such models to get in-depth of their architecture.

Danish Zaffar Wani, Haiqa Riyaz and Ubaid Illahi 2022“Solving Congestion by Designing of Traffic Signal at T-Intersection (Qamarwari Chowk) in Srinagar, J & K”

Here the author carried out traffic studies and measurements were taken at the “Qamarwari Chowk” which was a T-Intersection in order to design traffic signal so as to highlight the problems which are in turn a cause of congestion at the intersection.

The major aim of this study was to solve congestion and make the traffic flow smooth at this T- intersection, which was done with the help of Traffic Signal Design. The design was carried out as per IRC guidelines is

chosen which works out to be efficient. The method also explained about the pedestrian green time which was a very important concern regarding safety.

III. METHODOLOGY

Data collected from Police Records

With the prior permission of the concerned S.P, the accident data were collected on two-lane highways from three police stations as shown in Table 1.

Table 1: Police stations and road sections covered

Police Station	Road section covered under the police station
Bajaria Police Chowki	Section I
Anusuchit Jati & Janjati	Section III
Vidisha Police Station	Section IV
Civil Lines Police Station	Section II

The police stations have their own FIR records of several years. The data from these records of last ten years were extracted from the FIRs filled under IPC NO.279/337/338/304 (A).A sample copy of the profomra

Table 2: Details of accident stretch wise (as per government data)

year	Fatal				Total	Major				total	Minor				total
	S1	S2	S3	S4		S1	S2	S3	S4		S1	S2	S3	S4	
2008	9	3	0	6	15	4	5	1	6	16	15	8	2	12	37
2009	6	3	0	2	11	10	18	1	6	35	10	26	2	12	50
2010	3	1	1	11	16	5	13	0	7	25	11	24	0	10	45
2011	9	4	1	6	20	7	17	2	6	32	10	20	2	7	39
2012	10	3	1	7	21	11	11	2	10	34	14	12	1	13	40
2013	6	4	1	7	18	23	3	2	13	41	33	15	7	29	84
2014	1	2	0	1	4	9	10	1	4	24	14	23	2	22	61
2015	6	2	3	2	13	18	7	3	4	32	22	18	5	36	81
2016	8	3	0	7	18	25		9	0	34	36	18	2	28	84
2017	2	3	1	5	11	10	6	1	13	30	16	16	3	23	58
Total	60	28	8	54	147	122	90	22	69	303	181	180	26	192	579

Site Investigation





Table 3: Traffic and Roadside features data of four stretches (2018)

Stretch No	ADT	Q_{max} (pcu/s)	Access Road	Trees on Shoulder	Poles	Curves	Shoulder condition	Lighting condition
1	63600	0.82	35	23	53	6	Good	Good
2	32160	0.74	21	25	21	5	Average	Average
3	32160	0.74	6	0	0	3	Poor	Poor
4	48960	0.92	4	1	1	6	Poor	Poor

Accident Investigation

Accident no-1

Accident type: Head-on collision

Location: Vidisha Bus Stand

Date and Time: MAR 30, 2013; 4.30PM

Vehicle 1: Tata Truck no OR-06/ B-6545

Vehicle 2: Bajaj CT- 100 motor cycle no OR-05/U-3323 Fatalities/Injuries: One person dead and one person severe Injured.

Description: On 30th March 2013 one Bajaj motor cycle with two person collided with a aluminum loaded truck in front of captive power plant Nalco gate around 4.30PM. The motor cycle was coming from captive power plant and truck was moving on highway. The motor cycle rushed to the right side of truck front. The truce applied brake and turned towards left side. The bike fell down under the rear right wheels. The victims were severely injured. The rider lost his right leg completely and left leg scratched while other was under truck with severe knee and head injuries. The rider had used helmet and saved from head injury. The ambulance came after 30 minutes and took victims to the hospital. The victims were two brothers from Jajpur town and rider lost his life after two hour of incident. Cause of accident was due to presence of old banyan tree on the corner of T-junction and ditches of shoulder was filled with water. The motor cycle could not notice the truck due to that big tree and collided with truck on the highway. The tyre skid mark length was 11mt.

Accident no: 2

Accident type: collision with tree Location: In front of police station vidisha Date and Time: JUN 13, 2012; 12.30PM Vehicle 1: Asok Leyland trailer

Vehicle 2: Bajaj Auto

Fatalities/Injuries: Two person minor Injured

Description: The trailer was on the highway with normal speed. At a T-junction one auto with nine passenger was changing direction (left turn) from bus stop road to highway. Both vehicles became front to front. The trailer driver applied sudden brake and struck the vehicle with a old tree present at corner of junction. The auto was escaped from collision.

IV. CONCLUSION

- 1 The available literatures on accident analysis indicate that 77.5 percent of road accidents in India are caused due to driver's error.
- 2 Heavy vehicles like truck are involved in maximum no of accident on two-lane roads. It is estimated that fatalities caused by truck is 59 % followed by other (26%) and bike(7%) and jeep (5%) and bus (3%). Road safety awareness should be raised among road user.
- 3 Stretch IV has the highest no of accidents which accounts for 34.1% of total accidents. The accident rate can be decreased by road side clearance, proper maintenance of shoulders, lighting, and junction improvement. Speed limit should be brought down by providing humps near accident spots. Sight distance near curves should be obstruction free.
- 4 Stretch I have the second highest no of accidents accounts for 32.5% of total accident. The Accident rate can be reduced by providing signalized junction, junction improvement, and shoulder Clearance, installation of humps, shifting of poles, removal of trees near the edge of pavement etc.
- 5 No of accidents in stretch II accounts for 29.6% of total accidents. The accident rate can be minimized by clearing-off shoulders, reducing speed limit, junction improvement, providing Signals on the median, shifting structures on the shoulder.
- 6 Stretch III has minimum no of accidents accounts for 3.7% of total accidents. Speed limit reduction near junction should be reduced to prevent accident.

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