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REVIEW ON: ROAD SAFETY AUDIT ON NH-48 IN PUNE MAHARASHTRA

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Abstract: India is a vast country that relies heavily on the highway network for national development. National highways are key transportation hubs and safety must be prioritized to avoid accidents. As the number of vehicles on the road increases, the chances of accidents increase. Accidents can be broadly classified into two categories: subjective factors and objective factors. Subjective factors relate to the mental state of drivers and pedestrians, while objective factors relate to road conditions and engineering aspects. Subjective factors cannot be controlled from the outside, but objective factors can be addressed through various corrective measures. This paper is complemented by objective factor analysis and description, visual road surveys and focuses on suggestions for improvement. Both primary and secondary data were collected to analyze the accident prone areas. Primary data was obtained through physical surveys conducted on NH-48 and secondary data (available data) from National Highways Authority of India (NHAI) in 2020-2021. The collected data were then analyzed using ranking, weight severity and crash density methods to identify random sunspots on NH-48. Then, after further investigation, appropriate corrective actions are suggested for each identified accident prone area. These measures cannot completely eliminate accidents, but they are aimed at minimizing accidents as much as possible.

Index Terms - Accidental Black spots, NH-48 (National -Highway 48), Ranking Method, Severity, Index Method, Accidental density method.

I. INTRODUCTION

Traffic safety has become a major concern worldwide due to the frequent occurrence of accidents in recent years. It is very important in the current scenario. According to a 2015 report by the National Crime Records Service, the number of fatal accidents in Maharashtra stood at 3,577, with 9,396 serious accidents recorded on national highways. To effectively prevent traffic accidents, it is important to identify, analyze and deal with the risks of accidents. Maharashtra is one of the fastest growing states in India and its development is due to its good road network. This network facilitates the efficient and fast transportation of goods within the country and contributes to the development of the entire country. However, with the increase in population, the number of vehicles on the roads also increases, leading to an increase in accidents, which hinders the development of the state. To reduce accidents on highways, it is necessary to identify accident-prone areas and conduct research to implement appropriate corrective measures for those specific road sections. In a continuous effort to reduce accident rates, improve overall road conditions and enhance the driving experience on the roads, the National Highways Authority of India has issued an annual Road Safety Audit report. This formal safety performance assessment helps assess the likelihood of collisions on new and existing roads, leading to road improvements and maintenance.

The main objectives of this report are:

- Minimize accidents.
- Reduction of injuries caused by accidents.
- Ensure safety standards are met in road design.
- Improving safety for all road users

In short, the traffic safety audit report aims to ensure that all new highway projects and existing schemes operate with maximum safety. This requires consideration of safety aspects during the planning and construction process of any project. Considering that road safety is a matter of life and death, road safety is an integral part of the analysis of accident hotspots.

. 2. SCOPE AND OBJECTIVE

The objective of this project is to assess the 12 km stretch along NH48 from Bhujbal Chowk (Wakad Bridge) to Chandani Chowk. The following objectives will be addressed:

Conduct a visual survey of the road to identify potential physical characteristics and other independent factors contributing to the occurrence of fatal black spots in specific areas.

Analyze the data collected along with NHAI data to investigate the causes of accidents in field surveys.

Propose the right solutions to solve the causes of accidents in approved black spots to reduce accidents and make these black spots safer.

. LITERATURE REVIEW

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3. RESEARCH METHODOLOGY

The methodology mainly involves collecting available data and doing visual inspection to identify black spots. There are two main methods used for this purpose:

I. Collection of available information:

This data is obtained from the National Highways Authority of India (NHAI) and is serialized with a chain of 1000 meters. The information collected includes the location, nature, classification, damage, and summary of the accident. Various methods of analysis are applied to this data, including:

- I. Rating and weight index method
- ii. Random density method
- iii. The method is weighted

II. Visual Poll:

Information on this condition is verified by visual inspection of the condition on site. Visual search is carried out in two stages:

a. Select parameters:

Objective parameters are considered in this study because they can be solved using engineering solutions in accordance with road standards. These parameters are selected from sources such as international journal papers, input from road users and expert opinion.

b. Physical examination:

A real-world survey involves dividing the route into sub-sections and checking selected parameters in each section. The data obtained from this research was analyzed using the rating method and the severity index method.

To analyze the available data, the data is grouped into several categories, including the nature and classification of accidents. Parameters such as rollovers, head-on collisions, rear-end collisions, collision brushes, right turns and skidding were selected for analysis using the rating method and severity index.

The ranking method involves ranking parameters according to their occurrence. The most frequently appearing parameters are given the highest rank, and the least frequently appearing parameters are given the lowest rank.

. RESULTS AND DISCUSSION

Results and discussion

3 Ways to Remove Black Spots on Highway 48 in NH

- Identify the selected location.

• NH-48 suffers from several problems that contribute to the formation of dangerous black spots. This problem is mainly due to lack of regular maintenance. However, if the authorities carry out periodic maintenance, we can expect a significant reduction in the number of black spots in the future.

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