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Case Study - Rehabilitation and up-gradation of Ahmednagar- baramati-phaltan NH-160 by Using Road Safety Audit

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Abstract - Road safety is a huge problem in develop and developing countries, road safety measures are not implemented seriously yet, especially in developing countries. Road safety measures are important to be defined and implement before, during, and after road accident occur. Furthermore, evaluation is needed after implementation of road safety measures, in order to find out whether safer road is better or not. The aim of this study is to develop road safety measurement based on existing road condition, traffic condition, accident happened, before and after implementation of road safety measures. Road safety value by indicators as the results should be implemented consistently and hard effort of all stakeholders should be done to provide sear road. Results of this study are important to reduce number and severity of casualties and moreover lead to safer road. Post-construction. The purpose of the audit is to identify road safety problems and to suggest measures to eliminate or mitigate any concerns. Road Safety Audits are undertaken by self or road safety engineering. The purpose of the evaluation will be to determine whether the objectives of the process have been achieved and to make an assessment of the quantifiable benefits which flow from the audit process. This report on the findings of the Ahmednagar - baramati-phaltan NH-160. The research showcases the problems arising on NH-160 and Public is facing lives Risk by travelling through it.

***Key Words*:** Work zone; Safety audits; Construction stage; Guidelines. NH -160.

1.INTRODUCTION

Road safety audit is a systematic and formal process of checking the safety aspects of road schemes before they are built. The objective is to identify potential safety problems, so that, where possible, the design can be changed to eliminate or reduce them. The audit is carried out by trained and experienced auditors who are independent of the scheme designers. Road safety auditing follows the principle of "prevention is better than cure". An audit conducted at the planning or design stage allows a line on a plan to be changed, which is much cheaper than having to alter asphalt or concrete once the scheme has been built. Most countries have experience of having to make major alterations to a newly-built road because a significant safety problem was designed into the road. This can be avoided if all schemes are audited before construction. Experience from other countries suggests that at least a third of crashes can be prevented or their severity reduced by conducting road safety audits and acting on the findings. In today's world road and transport has become an integral part of every human being. Everybody is a road user in one shape or the other. The present transport system has minimized the distances but it has on the other hand increased the life risk. Every year road crashes result in loss of lakhs of lives and serious injuries to crores of people. In India itself about eighty thousand people are killed in road crashes every year which is thirteen percent of the total fatality all over the world. Man behind the wheel plays an important role in most of the crashes. In most of the cases crashes occurs either due to carelessness or due to lack of road safety awareness of the road user. Hence, road safety education is as essential as any other basic skills of survival.

2. NEED OF STUDY

- As per the Road Accident Report for 2019, a total number of 449,002 accidents took place in the Country during the calendar year 2019

leading to 151,113 deaths and 451,361 injuries. In

- Percentage terms, the number of accidents decreased by 3.86 % in 2019over that of the previous year, while the accident related deaths decreased by 0.20 % and the persons injured decreased by 3.86.
- The decline in road accidents, killings and injury reported during the calendar year 2019
- Appear to have been a result of the Motor Vehicle Act implemented in States from September Ist 2019 which focused on road safety and included, inter-alia, stiff hike in penalties for traffic Violations as well as electronic enforcement.
- Disproportionate share of 35.7 per cent of deaths in 2019 pointing to need for improved.
- National Highways which comprise of 2.03 percent of total road network, continued to account for a Enforcement and correctives to be put on National Highways. State Highways which account for 3.01% of the road length accounted for 24.8 percent of deaths. Other Roads which constitute about 95 % of the total roads were responsible for the balance 39% deaths respectively The working age group of 18 – 60 accounted for a share of 84 percent.

3. OBJECTIVE AND SCOPE OF STUDY

The major objective of the for Safety Audit is to ensure safety as a primary operative feature on the chosen section of NH-160.

The purpose of carrying out safety audit is to: 1. Minimize the risk of severity of accidents on the project road,

2. Minimize the risk of accidents occurring on adjacent roads as a result of operation and maintenance of the project road,

3. Ensure safety for all categories of users of The project road,

4. Reduce the long term cost of the scheme, Bearing in mind the overall cost-effective Safe solutions, and

5. Improve the level of awareness of safe Design practice by all involved in the Planning, design, construction, Maintenance and operation of roads.

3.1 SCOPE OF SERVICES FOR CONSTRUCTION STAGE

A. Review Contractual Provisions and Establish Work zone Safety Audit Procedure.

B. Conduct detailed Work Zone Safety Audit and Recommend Remedial Actions.

C. Strengthening Work zone Safety Implementation by NHAI.

D. Prepare Work Zone Safety Report

4. SAFETY ISSUES OBSERVED DURING THE SITE VISIT

We had undertaken the site visit of the project stretch. Identified hazardous locations along the project road during the site visit. The major observations are:

1. Issues at temporary Diversions.
2. Issues regarding Traffic Safety Measures adopted at site.
3. Improper barricading of work area.
4. Absence of center and edge line markings in existing road.
5. PPE for Workers
6. Dust Control and Suppression Arrangements.
7. First Aid Box.
8. Emergency Response Mechanism.
9. Housekeeping

5 COMPLIANCE OF SAFETY ISSUE

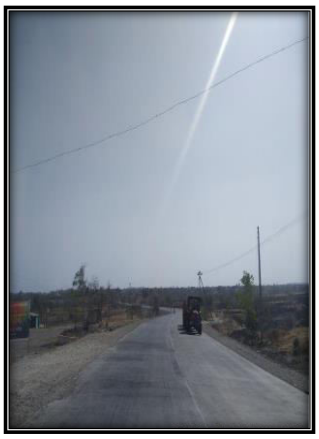
5.1 Temporary Diversions

Remark - Sign installed is not as per IRC standard at km 16+200& 7+640

5.2Traffic Safety Measures adopted at site


Remark - Work-zone sign installed above is not as per IRC standard at km 6+000

5.3 Absence of centre and edge line markings in Existing road.

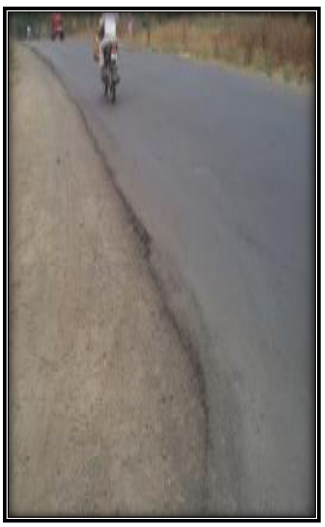



Remark- Center and edge line markings are not Provided on entire road.

5.4 Barricading of work area


Remarks - Proper Barricading of hazard just preceding the railing portion not been done at km 6+200.

5.5 Poor Pavement Condition




5.6 PPE for Workers


Remark-Workers working without PPE at km 57+975.

5.7 Dust Control and Suppression

Arrangements


Remarks - Dust control measures are certainly required at km 62+400.

6. SUGGESTIONS FOR IMPROVING ROAD SAFETY

The road construction activities are being carried out at various locations on the project road sections. The work zones are lacking the safety measures required to address the safety concerns of all road users.

- All the diversion signs installed and the traffic management scheme should be as per IRC SP: 55:2014. Wherever diversions are provided the widths of those should be equal to that of the previously existing road and also the diversions should not lead to bottle necks and traffic congestion, especially on chainages Km 15+600, 38+300 etc.
- Vehicular traffic must be warned that a work zone is ahead, not only to alert the drivers to be aware of hazards, but to also warn them that lane changes, detours, or temporarily blocked streets may appear. Warning signs must be placed in advance of the work zone, as detailed in chapter 5.
- Barricading Type of road work zone traffic equipment serves to establish transverse and longitudinal closures, to guide and funnel / channelize the traffic, and/or to create a visual and physical separation of opposite-way lanes. This must be done properly as per IRC standards.
- Steps to be taken to provide proper road markings and maintain those well always. Provide markings on each category of roads whether it is existing road waiting to be upgraded, an upgraded road section being used as a diversion or a temporary diversion as a part of the traffic management for the work zone.
- It is necessary to provide adequate visual information to the driver to control and navigate the vehicle, and also to enable the pedestrian to safely walk to the intended destination. All the median kerbs should, therefore, be properly painted as per IRC guidelines and should always be maintained well.
- The damaged road section needs to be repaired at regular interval.

7. CONCLUSIONS

There are few safety concerns as highlighted in chapter of the report. The road would be safer for travel if issues raised in the report are implemented at the site.

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