A CASE STUDY TO LOCATE AND ANALYZE CONFLICT POINTS AND DEFICIENCIES IN KR PURAM JUNCTIONS AND STREETS [BENGALURU URBAN AREA] INVOLVING IN TRAFFIC CONGESTION AND ACCIDENTS, AUDIT ON REMEDIAL MEASURES TO BE ADOPTED TO INCREASE LEVEL OF SERVICE

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Introduction:
Presently growth of traffic in our country has been revolutionized. This directly leads to increased growth of traffic rate & increase in accident rate especially at urban intersections & metropolitan cities like Mumbai, Kolkata, Bangalore, Pune, Hyderabad, Chennai etc., This results in a huge cost to society in terms of death, injury, lost productivity, fuel consumption, delay, discomfort & property damage. Therefore studying & analyzing traffic accidents has become very much essential in order to finding out solution for reduction in accident rate. But it is very complex & difficult to predict the effectiveness of specific intersection improvements that are aimed at reducing accident frequency.

Bangalore is one of the cities, which has high growth rate of traffic from year to year which leads to huge traffic congestion and hence unscientific movement of traffic in Bangalore roads, which finally results in increased number of conflict points, accidents and decrease in level of service.

In the present investigation an attempt is made to analyze & evaluate performance of KR Puram junction in Bengaluru city by considering past year accidents population, traffic volume, geometric standards & other relevant factors which are influencing on the performance & operation of traffic. Solution for reduction in congestion & accident rate, finally aimed at increase in level of service.

Objective:
1. To identify the conflict points and black spots.
2. To study the causes for congestion & accidents and corrective measures at potential locations.
3. To evaluate existing design.
4. To propose new design and provide economic justification.
5. To carry out before and after studies and to demonstrate the improvement in the problem.
Methodology:
There are many parameters and factors needed to be considered while locating and analyzing conflict points and black spots. The following methodology has been adopted which is suggested by Indian Road Congress and also it is evident that the following procedure will effectively reduce the congestion and accidents which results in smooth flow of traffic.
1. Collection of previous year’s data for the taken stretch [Accident and traffic data].
2. Identifying black spots and locating conflict points.
3. Collection of traffic volume data at selected points and also spot speed studies.
4. Studying and analyzing the existing design at the selected points.
5. Congestion studies for selected stretch [Speed and Delay studies – Floating car method].
6. Developing a relation between speed, time and flow.
7. Analysis and interpretation of obtained results from the investigation. [Deciding present level of service]
8. Finding the deficiencies of selected points.
9. An audit on remedial measure for smooth flow of traffic without congestion with less delay
10. Time and also improvement in decreasing accidents at black spots.

Brief discussion of results:
1. From floating car technique K.R.Puram roads are operating with an average journey speed of
2. 22 Kmph and an average running speed of 39 Kmph.
3. Average volume traffic operating in KR Puram roads is 4300 PCU/hour
4. From the past and existing studies the accident rate at KR Puram roads is very much high.
5. Presently K.R.Puram roads are operating with a level of service D and E according to HCM manual hence by incorporating the suggested remedial measures level of service may be increased to B and C.
6. Hence we are concluding that rectification of deficiencies on above roads is very much required to increase level of service.
7. Incorporating Subway and suggested remedial measure at the KR Puram railway station and Tin Factory flyover will effectively reduce the conflict points and congestion. This allows the smooth flow of traffic in KR Puram roads.
9. Diverging the traffic from Byappanhalli to Electronic city via HAL road which will reduce the congestion at Mahadevpura.

Scope for future work:
1. Identification of roads exceeding their capacity and their improvisation in enhancing level of service by conducting various traffic studies.
2. A comprehensive study for Bengaluru city after providing bus lane for major road stretch.
3. Analysis of the road network after providing NAMA METRO facility.