

A REVIEW ON FEASIBILITY STUDY FOR PROPOSING SKY WALK AT A BUSY TRAFFIC JUNCTION

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Abstract: Bangalore is rated to be one of the fastest growing cities in Asia with a current population of about 8.8 million and the life style of people and their commuting habits have undergone radical changes in case of an urban areas. This tremendous growth is making unsafely for vulnerable road users like pedestrians. Walking is still a major mode of transportation in cities of India. The pedestrian traffic has large share in metros as well as in mid-size cities of India Despite of fast growing number of vehicle. However there is negligence toward study of pedestrian behaviour, flow characteristics, capacity of pedestrian facilities. Due to in adequate facilities provided for the pedestrian movement, there exists a constant conflict between pedestrian and motor vehicles in sharing the limited space of the road. Provision of grade separator and sky walk facilities will ensure the moment of pedestrian safe comfortable.

Keywords: *Skywalk, Pedestrians, Intersection study, Traffic conflicts, etc.*

1. INTRODUCTION

1.1 General

In Bangalore city from last couple of decades, life of the citizens and their lifestyle has changed drastically because of incredible developments. The volume of vehicles on road are raising it is competing with human population growth and this is becoming great reason for the traffic congestion and violation

of rules and regulations with respect to the traffic. This is also causing a problem for the pedestrians.

A pedestrian can be defined as a person who is walking on the road by foot. The safety of any pedestrian who is travelling or walking on or by the side of the road is very critical in these metropolitan cities particularly for the growing cities just like Bangalore to faster rate. However, lot efficiency with reference to safety of any pedestrians in cities like Bangalore because of scarcity in availability of land. The reasons for this are improper or unplanned designing after cities and other facilities. However, in summer weather conditions benefits will not you even use the facilities provided due to improper awareness about that provided facilities for might be because of carelessness too. In many other cases foot paths will be occupied by the vendors this can also be the reason for the pedestrians not using these facilities. And in many places the services of the facilities provided for the pedestrians might not be maintained properly. In order to take care of pedestrians Road users and citizens this type of situations there is a need of the day for providing proper pedestrian facilities from the point of safety of road users who are vulnerable for the accident.

1.2 Need of Pedestrian Facilities

The transportation studies conducted in various cities like Delhi, Mumbai, Surat, Bangalore, Jamshedpur etc. have revealed that

exclusive walk trips constitute 30-40 percent of the total trips. Further, walk trips are considerable for journeys to education and shopping especially when the distance of the trip is less than 1 km. In urban areas, people should be able to walk with reasonable comfort and safety, as walking is an essential part of a wide variety of activities. The freedom with which a person can walk about and has not received adequate attention in providing the facilities such as walkways, sidewalks and pedestrian crossings. Declining share of walk trips, increasing number of road accidents where about 50% involve pedestrians the results in planning, designing and upgrading the various pedestrian transport infrastructure/facilities.

2. LITERATURE REVIEW

2.1 Hitesh A. Patel et. al (2016) The primary purpose of this literature is to make a provision of pedestrian safety at a few of specific intersections. In this paper case study of some of the vicinities of Visnagar, MN road, GD circle is carried out. In these places the pedestrian facility is provided with very poor safety measurements. A conclusion based on saying that new proper signals for the pedestrians at these interactions are provided neither God rails are installed which will safeguard the pedestrians. And they have carried on a study e of how to develop the pedestrian facilities and improve the safety facilities at these locations.

2.2 Rojas-Surez et. al (2019) Accident rate increases as the vehicle number increases and the chief usage of roadway must be by the walkers or the pedestrians. But this fact is not full filled as the vehicle traffic is given more importance. A study has been carried out about the characteristics of vehicle Road, determine the critical places and around sections with a highest demand of the population that are considered the most for the pedestrian

crossings. They have obtained the volume of vehicles in the form of numbers to arrive at the flow of vehicles that causes the chosen Road in the form of tables as well as graph. This helped the research team in identifying the statistical data. Apart from this they have also obtained pedestrian accounts. And they have also conducted a survey about the opinions of the pedestrians and concluded that the motor vehicles are the main causes for pedestrian's accidents.

2.3 Vinayaka et. al (2020) The main purpose of this paper was to consider the pedestrian safety show the research team has taken a pedestrian chords I question every survey on the streets was carried out by using VISSIM software. The main approach was to give a considerable impact on the safety of the pedestrians. And it could also be utilised for making the decisions regarding making process to enhance the the pedestrian safety.

2.4 T. Subramani et. al (2012) This study tells that walking is an integral part of a human and it is the oldest and the most important mode of transportation for the human being. Since any pedestrian who is using the road or exposed tour is come accidents it becomes very important to take into the consideration of these pedestrians safety by providing facilities like signals guardrails secured crossings grade separations footpath etc. In this paper a case study has been carried out on a famous city in Tamilnadu that is Salem. 18 and conclusion has been drawn on how to enhance the safety of pedestrian in this locality.

2.5 Sudhir and Sameera kumar (2013) English research the author writes that there is a possibility of underestimating the infrastructure needed for the pedestrians when compared with that of infrastructure needed for the motors. Or in other words importance is given to the motor is more than pedestrians. We have facing the situation where at least one Walker is killed in cities like Bangalore. In his

research the author had put an effort to carry out the investigation on the design safety economy and the policy issues currently existing infrastructure of pedestrian.

2.6 Ashish Verma and Shirin Marry Anthony (July 2014) In the heterogeneous structure of our country's both rural and urban areas the street vendors are not only inevitable but they are part of our daily life as they are able to provide the services to all the commuters with easily available at lesser cost goods. The whole purpose of the study carried out by the author in this paper is to explore the guidelines of pedestrian policy in Bangalore city that considers and also integrates the provision for the vendors on the street and also formulates proper strategies for study location and develop all-purpose pedestrian pathways design guidelines.

2.7 Aishwarya Fadnavis (Sept. 2015) In this paper a study has been carried out by focusing the pedestrians crossing facilities like work pass and under pass and where aspects involved in this is facilities pedestrians will have a greater assertion to the roadway just like vehicles. At the same time it has to be kept in mind that in future the demand of four wheelers and the public transportation system will go on increasing and this needs a solution from now itself.

2.8 Khairul Enam and Sheikh muhammad Rezwan (Sept. 2019) The average traffic speed of Dhaka, one of the most densely populated megacity in the world, has fallen to 6 km per hour according to World Bank, which is almost similar to the usual walking speed and this congestion eats up 3.2 million working hours per day. Till now, a lot of policy measures and plans have been taken and some of the developmental works i.e. the construction of MRT(Mass Rapid Transit), BRT (Bus Rapid Transit), Elevated Expressway, numerous flyover etc. are in progress. But the proposals barely

accommodated the pedestrian mobility issue, that needs to be taken into consideration. In this backdrop, this research conduct extensive field survey in New market area, one of the busiest shopping area, where there is a proposal for elevated BRT line. The land use, traffic, pedestrian behavior, street vendor's information etc. is surveyed. The impact of proposed BRT line and the station is analyzed by reviewing the proposed design by the Government and then connecting the literature survey with field survey. Then an integrated elevated skywalk below the BRT line is proposed which has the possibility to minimize traffic congestion and ensure a safe pedestrian walking. The proposed skywalk accommodate the energy efficient and pollution reduction measures. The wide skywalk may promote art and culture through the design strategy. The proposed design of the skywalk dovetailed with urban life requirements will certainly contribute in achieving certain SDG goals which will lead towards a smart Dhaka.

2.9 Andrew Harris (2018) investigated the engineering of elevated transport infrastructure in contemporary Mumbai. It argues that the conception, construction and implementation of flyovers and skywalks in Mumbai over the past 20 years has been part of elite efforts seeking to instill a more free-flowing, predictable and regulated city. The techniques, routines, standards and visualizations comprising these engineering schemes have promised ways of reshaping the socio-material configurations and everyday landscapes of Mumbai into a more knowable, functional and integrated realm. The article suggests that this can be understood analytically as a means of trying to establish and maintain 'formal' ideals, citizens and spaces in Mumbai against wider urban contexts perceived as increasingly 'informal'. The article thus emphasizes the importance of exploring how the 'informal' and 'formal' are actively produced and imagined against each other through material practices and

procedures, and the central role of urban engineering in attempts at reconfiguring the social and political dimensions of urban life.

2.10 Wanqing SU et. al (Nov 2021), One of the urgent problems in planning and construction of cold cities in China is how to build skyways with climate protection function in the central areas of typical extreme cold cities in China. This paper takes Minneapolis of the USA and Harbin of China as typical cases in the cold regions. Based on Arcgis10.4 platform, this paper analyzes open data such as OpenStreetMap and POI, and expounds the typical characteristics of the air corridor system construction from two aspects of the urban external space support and the land use support. In the aspect of the external space support of the city, the comparative analysis is carried out from three dimensions, namely, the macro and the micro scale, including the building density, the space between the building Street walls, the corridor length and the connection form. In the aspect of land use support, the paper makes a comparative analysis from the aspects of the functional relationship between blocks and the degree of land use mix. This study reveals the characteristics of the outer space and land use function suitable for the construction of skyway, and draws the suitability evaluation of the air corridor system construction in the eight commercial centers in Harbin, scopes the suitable area for the construction of the skyway, and determines the preliminary plan of the planning and construction. The purpose is to promote the pedestrian friendly and enhance the vitality of commercial center in extreme cold cities.

2.11 Mr. Jagdish Desai and Mrs. Smita Pataskar (June 2017), Walking is one of the most sustainable traffic modes in urban transportation system. Particularly in countries like India. Because of the flexibility and mobility involved in it. Pedestrian are facing problem during crossing at signalized

intersection cross walk under the mix traffic condition Analysis of field data yield some notable observation as follows pedestrian adjust their crossing speed based on the traffic condition at the particular time. Pedestrian non uniform arrival pattern was observed and some of pedestrian crossing cross walk during flash red signal phase and red phase. Considering the above mention pedestrian crossing factor study conducted on crossing time delay and waiting time delay base on signal red time for pedestrian in waiting area. Provision of grade separator and sky walk facilities will ensure the moment of pedestrian safe comfortable and also reduce the travel time a study was conducted in Chinchwad station area. The study results are presented in this paper. In present work study of pedestrian planning is taken up, to improve the pedestrian facility at these intersection.

2.12 Hiral Patel (Aug 2015) Pedestrians form the largest single road user group and also are the most vulnerable road users. Ahmedabad acts as role model in providing infrastructure to the various sections of society. I have selected Income tax intersection are such an intersection, which are facing these problems such as a High Pedestrian Traffic, Heavy Conflict of Pedestrian-Vehicular Traffic, Major Trip generator and attractor areas, the traffic flow is continuous, the pedestrian flow is of mixed type. In the present work study of pedestrian planning is taken up, to improve the pedestrian facility at these intersections. To check the adequacy of pedestrian facilities, pedestrian surveys i.e. pedestrian volume count, and pedestrian interview survey also traffic survey and also check the Levels of service of the exiting pedestrian facilities are evaluated for the existing condition as per the guidelines of HCM (2000) and guidelines of pedestrian facility IRC 103: 2012.

3. CONCLUSIONS

In busy traffic intersections in urban areas,

alternate provisions should be given for pedestrians to commute between roads. The pedestrians using the roads along with the vehicles will be life risky and also there will be obstructions to the traffic flow. The un-signalised intersections are more unsterilized with the flow of pedestrians randomly obstructing the traffic flow. Hence the provision of skywalk can be a solution for safety of pedestrians and also to ensure smooth and undisturbed flow of traffic.

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