

# Study on Pedestrian behaviour near an Ashoka Road

**Manjushree. K**

*M. Tech. Student*

*Siddaganga Institute of Technology, Tumakuru-572103,  
India*

**Sreevatsa. S**

*Assistant Professor*

*Atria Institute of Technology, Hebbal, Bangalore-560024,  
India*

**M.N Shivakumar**

*Associate Professor*

*Siddaganga Institute of Technology, Tumakuru-572103, India*

## Abstract

At present, there are many problems being faced by road users in urban area with limitation of land space and traffic congestion, pedestrian are one of the most vulnerable entities of the transportation system. It is observed that there is an increase in number of conflicts between pedestrian and the vehicles in the city. In order to mitigate the conflicts between vehicular traffic and pedestrian traffic an attempt is made to provide a Skywalk. The present study involves the Opinion survey of pedestrians, Mid-block traffic count, pedestrian count were carried out for Ashoka road on weekdays and weekends. From the opinion survey, traffic count and pedestrian counts we can conclude that there is a need to construct Skywalk to reduce the pedestrian accidents rates on Ashoka road.

**Keywords: Pedestrians, Footway, Reconnaissance Survey, Midblock Counts**

## I. INTRODUCTION

### A. General

Tumakuru over the years has been adding on motor vehicles on its roads but the road lengths remains the same and unscientifically designed intersections facilities adds to the woes of the road users, but Tumakuru does not have even a single pedestrian foot over bridge inside the city limits for safe crossing. (Recently two pedestrian Skywalks foundations are laid by NHAI) in the city limits of tumakuru. It is estimated that the area covered by Tumakuru City Corporation is 48.6 sq km housing a population of above 3 Lakhs (2011 Census).

### B. Pedestrian

Pedestrian is a one, who walk, sit, stand in public spaces or use a mobility out like walking stick catches or wheel chair, be they children, teenagers, adults, elderly persons, persons with disabilities, workers, residences shoppers or people watches. The revision is taken up by the urban roads, streets & transport committee of the Indian road congress walking is an importance mode of transportation case of the urban areas, a significant preparation of 1-2kms length of tips is performed on floor.

### C. Footways

Footways are defined as any area primarily used by all pedestrian, they can be adjacent to road way or away from the roads. It existing footways are less than 1800mm wide, provision of passing places 1800mm wide & 2500mm long shall be made at a reasonable frequency depending on intensity of use.

## II. EXPERIMENTAL METHODS AND RESULTS DISCUSSION

### A. Study Area and Site Plan

The proposed pedestrian foot over bridge / Skywalk is located along Ashoka road connecting the government owned KSRTC bus terminal and the private bus stand. Ashoka road is a four lane divided road with limited land available on either sides of the carriageway for footpaths.

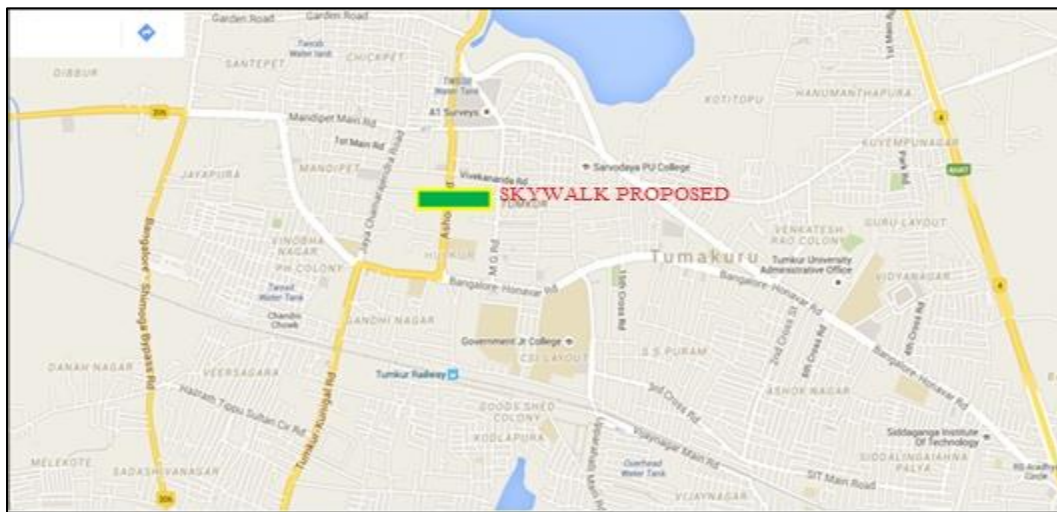


Fig. 1: Location Map of Proposed Skywalk

### B. Reconnaissance Survey

In order to understand the study, a site reconnaissance survey is essential. This survey will be done for the study area, to capture the road characteristics like available ROW and carriageway width. Land use in the site vicinity, major establishments and traffic generators shall be identified.

### C. Mid-Block Counts

Mid-Block Counts shall be conducted. These counts would be used to determine the future traffic on these roads and assess the capacity of these roads to handle future traffic. Manual traffic counts are carried out on a typical working day at all the identified locations. At each identified station, both directional counts are carried out by vehicle type. i.e. cars, jeeps, vans, buses, trucks, MAVs, LCV's tractors, motorized two wheelers and three wheelers, and slow moving vehicles along with Non Motorized Vehicles (NMV).The traffic data collected from the field are processed and converted into Passenger Car Unit (PCU) values as recommended by Indian Roads Congress (IRC) for urban roads.

### D. Pedestrian Counts

Pedestrian counts shall be conducted. These counts would be used to determine the footfall on a particular road stretch and assess the capacity of these roads to handle the pedestrians along with the type of facility to be proposed.

### E. Opinion Surveys

The random sampling for about 200 commuters were found with the following statistics; most of the commuters at the age of 26-45 have participated in the opinion surveys next being the commuters at the age above 45.The details are as shown in the table 1.

### F. Sex Ratio for the Opinion Surveys

The random sampling for about 200 commuters were found with the following statistics; most of the commuters who participated in the opinion surveys were females with 112 and Males with 88.The details are as shown in the table 2

### G. Problems Faced by Commuters While Crossing Ashoka Road

Out of 200 samples that were collected, the data shows that 94% of the commuters feel that crossing Ashoka road is high risk and invites accidents. Similarly 89% commuters say that they feel very difficult to cross the road while 84% say due to high speed of vehicles crossing Ashoka road is very hard. 83% of commuters say the traffic volume is high which is making them hard to cross the road and not but the least 78% of the commuters say that due to the entry of buses they feel difficult to cross the road. The details are as shown in the table 3.

### H. Necessity of Pedestrian Skywalk

200 samples that were collected; the data shows that 95% of the commuters feel that Pedestrian Skywalk is need of the hour. Out of the 95%, 69% say it is very essential and 26% say it is desirable to have the pedestrian skywalk connecting KSRTC bus stand and the Private bus stand. The details are as shown in the table 4.

Table - 1  
Surveys showing the Age of Commuters interviewed

Range of Age	0-18	19-25	26-45	above 45	Total
Number	35	46	64	55	200

Table - 2  
Opinion Surveys done with respect to Sex Ratio

Sex	Male	Female	Total
Number	88	112	200

Table - 3  
Problems faced by commuters while crossing Ashoka road

Sl. No	Problem Type	Number	Percentage
1	High Volume of Traffic	166	83%
2	High Speed of Vehicles	167	84%
3	Interference due to Buses at entry point	155	78%
4	Accidental risk	188	94%
5	Difficulty in crossing junctions	177	89%

Table - 4  
Details showing the Necessity of Pedestrian Skywalk on Ashoka road

Sl. No	Necessity	Number	Percentage
1	Very essential	138	69%
2	Desirable	52	26%
3	Not required	4	2%
4	No idea	6	3%

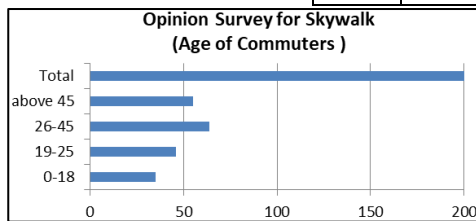


Fig. 2: Graph Showing participants Age for Opinion Surveys

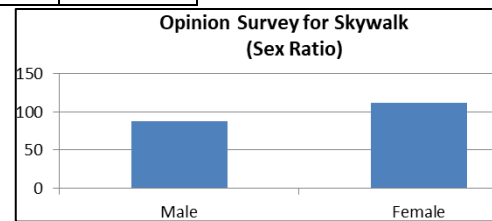


Fig. 3: Graph Showing Sex ratio participants for Opinion Surveys

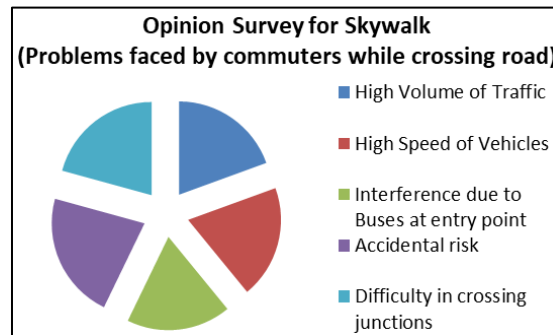


Fig. 4: Graph showing the various problems faced by commuters while crossing

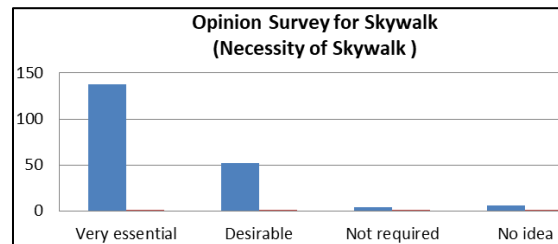


Fig. 5: Graph showing the necessity of Skywalk

### III. CONCLUSION

From the opinion survey we can conclude that most of the people participated in the opinion survey about 91% people said that they face many problems especially the female pedestrians who commute daily were of the opinion, that the sky walk is to be constructed on the Ashoka road.

### REFERENCES

- [1] Sejal S. Bhagat, Er.Manoj L. Patel, Er. PalakS.Shah (2014).” Pedestrian priority in Urban area and Usefulness towards community”, International Journal of Research in Engineering and Technology, Volume 3, No.1, pp.526-530.

- [2] SiddharthkumarShambhubhaiLukhi, Bhasker v. Bhatt (2015), "Need Assesment and Intersection Redesign Using NMT Approach for an Urban Arterial Road of Surat", *Journal of Emerging Technologies and Innovative Research*, Volume 2, No.5, pp.1671-1674.
- [3] Tarun Patel, Krupa Dave (2015), "Feasibility Study and Rapid Construction of Flyover at SahakariZin Intersection on NH-8, Himmantnagar", *International Journal of Engineering Research &Technology*, Volume 4, No.4, pp.68-71.