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Study of pedestrian foot over bridge on urban area

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Abstract *— As India's economy is expanding and growing at fast rate, the pressure on its transport infrastructure can be easily felt. The needs of an increasingly urban population, couple with significant increases in industrial, trade and commercial demand, socio, economic developments have placed immense strain on the existing transport infrastructure and resulting steep increase in transport demand The basis of this study is to design & formulate the management policy for smooth movement of traffic for Urban area SH-41 road. The study includes design of all the facilities as management measures, like provision of signals, raised intersections, closing side streets to regulate the traffic flow in the study area which indeed is a commercial hub of urban area.*

Keywords- Pedestrians, Traffic Volume, Foot over bridge, Traffic survey, intersection.

I. INTRODUCTION

The number of vehicles increasing faster than the number of new roads being built, resulting in more freeways experiencing heavy traffic. Traffic Management is the process of adjusting or adapting the use of an existing road system to meet specified objectives without resorting to substantial new road construction. Traffic management is the planning, monitoring and control or influencing of traffic. As. Medium and long term solution like widening roads, providing elevated fly-over and constructing bypasses and urban expressways are costly. Simple and inexpensive solutions can tide over the crisis for some time. Transportation System Management is a package of short term measures to make the most productive and cost-effective use of existing transportation facilities, services and modes. The traffic on the existing road system in cities grows, congestion becomes a serious problem also embraces Travel Demand Management. The rate of vehicle growth is taking place at a rapid rate of increase in India and especially in cities.

II. METHODOLOGY OF PEDESTRAIN FOOT OVER BRIDGE

Field studies should emphasize the observation of real user behavior. Simple field studies are fast and easy to conduct. For the planning process preparation of database is pre requisite step it is carried through inventory studies, field studies. Without basic data it is difficult to judge the present condition that prevail. The further step in traffic planning after study area delineation involves collection of data for studying the past and existing socio-economic, traffic and travel characteristics. This is a major activity in the whole planning process and required a lot of time resources and efforts. And accurate and large database is required to clearly assess the problem and formulate policy and plans for future and large amount of data is required for planning purpose, therefore its proper data collection becomes very important, especially when the same kind of data is collected from the various sources. The collected, processed, arranged and interpreted data should be free from any bias.

Following procedure was implemented.

Step-1 Primary Reconnaissance survey (General Inspection of site and area.)
Step-2 Inventory survey of surrounding roads to collect the data regarding road way width, Walkways, dividers, Intersections etc.
Step-3 Different Traffic surveys like Traffic volume study, Traffic composition survey, turning movement survey, Field videographer survey.
Step-4 Data analysis from obtained Results of Traffic surveys and projections of traffic volumes and analysis of anticipated traffic.
Step-5 Suggestion of different alternatives for traffic management in area.

III. WHAT IS PEDESTRAIN FOOT OVER BRIDGE?

- Pedestrian over bridges across roads have generally been unsuccessful, relative to pedestrian underpasses or at-grade crossings. people do not seem to mind walking down first, and by the time they arrive at the other end, are not conscious of the trouble of walking up. in contrast, When they reach an over bridge, people hesitate to climb stairs and look for alternatives. pedestrian over bridges are likely to be successful only across railway tracks and across wide roads with heavy traffic. provision of escalators would encourage the aged and the children to use the over bridges. Elevated walkways may be found successful across roads opposite railway stations.
- Skywalks are an extension of idea of pedestrian over bridges. It is an elevated walkway dedicated to the pedestrian for accessing facilities. They have been used in many cities in commercial areas to connect different commercial centers. Minneapolis is reported to have the longest network of skywalks connecting 69 blocks.
- Mumbai is the first city in India to go in for skywalks on a big way. They mainly aim at provide easy and safe access to busy suburban railway stations by providing skywalks in continuation of foot over bridges in the station. They have planned to provide 50 skywalks in the metropolitan area at a cost of about Rs.600crores. They will connect railway stations of high concentration and commercial points to destinations having heavy pedestrian flow some of them have already been completed. Other cities in India are also planning for skywalks at important locations.
- There are also pedestrian bridges as where walking could be even impossible. A foot over bridge is designed for pedestrians or in some cases cyclist to cross the road in India.
- Foot over bridge is becoming very popular in urban India as it help to cross the road for pedestrians without worrying about high speed traffic, as well as its very safe option without interrupt vehicles, in rural India it very helpful to cross the rivers.

IV. LITERATURE REVIEW

Several studies and reports have documented the important of pedestrian foot over bridge of Urban area are shown in table1.

Table: 1: Different studies on pedestrian foot over bridge

Objective	Conclusion	Author
Pedestrian priority in urban area and usefulness towards community	"Nothing is precious than life" sentence is suitable to this type of situation. Pedestrian facility will definitely be used when provided due to tremendous requirement.	Prof. Sejal S.Bhagat , Er. Manoj L.Patel, Er. Palak S. Shah
Feasibility Of Providing A Skywalk For Pedestrian in Chandni Chowk,Delhi	The provision of skywalk facilities in congested areas will provide a safe and comfortable journey to the pedestrian. In this study only the benefits accrued to pedestrians in terms of time savings has been taken into account	Purnima Parida,Jiten Shah,S.Gangopadhyay
Culture of Defying Laws: A Case Study on 'Foot Over-bridges' in Dhaka City	Government and pedestrians both should think that lives are most valuable and nothing should be compared with it.	Dr. Salahuddin M. Aminuzzaman, Sadik H. Shuvo
Pre feasibility report for development of modern foot over bridge	Infrastructure Development Department (IDD), Government of Karnataka is the Infrastructure arm of the government of Karnataka with the objective of facilitating / developing infrastructure projects	KSIIDC-IL&FS Project Development Company (KIPDC)

	across the Karnataka State.	
Pedestrian Bridge Feasibility Report Longfellow Bridge Rehabilitation and Restoration Boston, Massachusetts	Jacobs Engineering and our design sub consultant, Rosales + Partners, recommend that a new Pedestrian bridge be included as part of the Phase II Longfellow Bridge Rehabilitation located to the south of the Longfellow Bridge in the same general vicinity as the existing pedestrian bridge.	Massachusetts Department of Transportation Highway Division
Northgate Pedestrian Bridge Feasibility Study Report	The proposed location for the new bridge is just north of NSCC on the west end and between NE 100th Street and NE 103rd Street on the east end.	King County Department of Transportation Road Services Division Bridge and Structural Design Unit

V. OBJECTIVE OF STUDY

- Improved pedestrian safety.
- Reduced traffic consumption.
- To study socio- economic characteristic and travel pattern of pedestrian.
- To calculate fuel consumption saving and user travel time saving due to providing foot over bridge at cross road.
- To find out the benefit at particular crossing.
- Impact study of proposed foot over bridge in term of traffic.
- Signal free and smooth traffic movement.

VI. SCOPE OF STUDY

- Traffic congestion is very high at Modhera and Radhanpur cross road.
- This feasibility study report provide estimated cost benefit and concern of alternative method of providing safe pedestrian excess across the urban road.
- User travel time saving due to construction of foot over bridge .
- This Feasibility Study Report, the preliminary engineering was used to develop an estimate of probable project cost, benefits and drawbacks for each alternative, and to support the environmental document, as well as to facilitate future final design.
- The scope of work also included assessment of the direction and flow of pedestrians during peak and off peak hour, architectural assessment of the need and the nature of intervention required (foot over bridge, subway, underpass, type of technology), preparation of the concept drawing, carry out necessary survey and detailed topographic surveys .

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