PRE-FEASIBILITY STUDY FOR GRADE SEPARATED INTERSECTION FOR AT GRADE ROAD-RAILWAY INTERSECTION

[1]Dharmeshkumar Gajera, [2] Jayesh Juremalani, [3]Dr. KA Chauhan
[1]Mtech Student, [2]Assistant Professor, [3]Associate Professor
[1]Civil Engineering Department,
[1]Parul Institute of engineering and technology, Surat, India

Abstract- Highways are the road designed for the higher mobility, speed but in town due to the passing of railway and other side friction, functional performance of a Highway is not satisfactory. Due to congest high- way. The reliability to use the particular highway. Is the challenging task for the drivers? So the research is focused about the suggestion of flyover at Kim railway crossing. In this research paper, a literature review is carried out for the planning of flyover at a particular junction and the details of Survey required carrying out for giving the proposal for a flyover railway crossing.

Index Terms—Component, formatting, style, styling, insert.

I. INTRODUCTION

In India, Indian Traffic is highly heterogeneous comprising vehicles with wide variation in the static and the dynamic characteristics. Road Traffic condition in India is getting worse day-by-day. An average number of the vehicle in India is growing at the rate 10.16 percentage annually, since last five years. Urban traffic system is a nonlinear and time-variant complex system consisting of complex dynamic behaviors of massive Traffic participants. Most cities in India are experiencing multi-faceted problems as a result of rapid urbanization. As per the 2011 census, India's urban population has grown from 290 million in 2007 to 377 million in 2011 and account for over 30 percentage of India's total population. Due to movement of the train, the reliability to use the particular route was not observed and causes a large amount of delay due to stoppage of the vehicle due to the passing of train over a particular railway crossing. So this paper refers to the methodology to purpose the flyover over a particular intersection where a large amount of delay is observed.

II. LITERATURE REVIEW

(Harish et al. 2013) Studied The traffic management problem related to travel time delay, congestion, parking and gives the framework for operations and identifying the problem and solution is a proposal and give the suggestion that provides good mobility, higher speed, less delay. **(Taleb and Majumder 2012)** gives the monetary value of constructing flyover and a number of loss causes by delay and loss in travel time. and gives the proposal for constructing flyover**(Taylor and Knight 2012)** gives assessment criteria available to priorities metropolitan level crossings for grade separation. That include conventional economic, social and environmental measures and a 'strategic fit' criteria that reflect the relative importance of different roads to the transport network overall. It discusses challenges of data collecting, the weighting of quantitative versus qualitative indicators and this difficulty of accurately estimating the potential delay benefits from grade separations for a large range of sites. **(J 2014)** gives the proposal for constructing fly over at Y intersection for that they carried out the various survey, Traffic volume between morning and evening peak hours that capture the delay in travel time. they explained the proposal of constructing fly over at a particular junction at medavakkam intersection **(Ankit M Patel 2012)** carried out traffic classified volume survey Pedestrians Volume, Frequency, and duration of Gate closure of level crossing gate, Traffic delay Survey to observe the delay caused by flyovers and proposal for **Literature based on preferences survey used in the different survey.**

Stated preference survey

(Teodorović et al. 2007),(de Palma and Picard 2005)(Ben-elia and Shiftan 2010) (Shen, Ren, and Liu 2016)(Hong-Cheng, Xin, and Qing 2010) they carried out a Literature Review related to data collection stated preference survey they consider factors such as travel time, roadside, Origin, and destination information, Trip purpose, Mode choice, on the basis on the basis of collection of data the prepare a model such ANN, Fuzzy logic For Route choice behavior.

Traffic Volume Count

Traffic volume studies are conducted to determine the number, movements, and classifications of roadway vehicles at a given location. These data can help identify critical flow time periods, determine the influence of large vehicles or pedestrians on vehicular traffic flow, or document traffic volume trends. The length of the sampling period depends on the type of count being taken and the intended use of the data recorded. For example, an intersection count may be conducted during the peak flow period. If so, manual count with 15-minute intervals could be used to obtain the traffic volume data.

Manual count

The most common method of collecting traffic flow data is the manual method, which consists of assigning a person to record traffic as it passes. This method of data collection can be expensive in terms of manpower, but it is nonetheless necessary in most cases where vehicles are to be classified with a number of movements recorded separately, such as at intersections.

Automatic counts

The detection of vehicular presence and road occupancies has historically been performed primarily on or near the surface of the road. The exploitation of new electromagnetic spectra and wireless communication media in recent year has allowed traffic detection to occur in a non-intrusive fashion, at locations above or to the side of the roadway. Pavement-based traffic detection currently relatively inexpensive, will

be met with fierce competition in the coming years from detectors that are liberated from the road surface. The most commonly used detector types are as follow

Pneumatic tube

These are tubes placed on the top of road surfaces at locations where traffic counting is required. As vehicles pass over the tube, the resulting compression sends a burst of air to an air switch, which can be installed in any type of traffic counting devices. Air switches can provide accurate axle counts even when compressions occur more than 30 m from the traffic counter. Although the life of the pneumatic tubes is traffic dependent as they directly drive over it, it is used worldwide for speed measurement and vehicle classification for any level of traffic. Care should be exercised in placing and operating the system, to ensure its efficient operation and minimize any potential error in the data.

Inductive Loops

(Innamaa 2005)(Mak et al. 2009)(Bhouri and Aron 2014)(Tavassoli 2015) loop detector for measurement of travel time and collected the data.Inductive-loop detector consists of embedded turned wire from which it gets its name. It includes an oscillator, and a cable, which allows signals to pass from the loop to the traffic counting device. The counting device is activated by the change in the magnetic field when a vehicle passes over the loop. Inductive loops are cheap, almost maintenance-free and are currently the most widely used equipment for vehicle counting and detection. Single loops are incapable of measuring vehicular speed and the length of a vehicle. This requires the use of a pair of loops to estimate speed by analyzing the time it takes a vehicle to pass through the loops installed in series. An inductive loop can also, to a certain degree, be used to detect the chassis heights and estimate the number of axles. By using the inductive loops, the length of the vehicle is therefore derived from the time taken by the vehicle to drive from the first to the second Traffic.

Weigh-in-Motion Sensor types

A variety of traffic sensors and loops are used world-wide to count, weigh and classify vehicles while in motion, and these are collectively known as Weigh In Motion (WIM) sensor systems. Whereas sensor pads can be used on their own traffic speed and axle weighing equipment, they are trigged by "leading" inductive loops placed before them on the roadbed. This scenario is adopted where axles, speed, and statistical data are required.

Micro-millimeter wave Radar detectors.

Radar detectors actively emit radioactive signals at frequencies ranging from the ultra-high frequencies (UHF) of 100 MHz, to 100 GHz, and can register vehicular presence and speed depending upon signals returned upon reflection from the vehicle. They are also used to determine vehicular volumes and classifications in both traffic directions. Radar detectors are very little susceptible to adverse weather conditions and can operate day and night. However, they require comparatively high levels of computing power to analyze the quality of signals.

Video Cameras.

(Divia, Ravisekhar, and Ravishankar 2014)(Amrutsamanvar et al. n.d.) Ch. Ravi Sekhar, E. Madhu, B. Kanagadurai, and S. Gangopadhyay (2012) Video image processing system utilize machine vision technology to detect vehicles and capture details about individual vehicles when necessary. A video processing system usually monitors multiple lanes simultaneously, and therefore it requires a high level of computing power. Typically, the operator can interactively set the desired traffic detection points anywhere within the system's view area. Algorithms are used to extract data required for the detection of the raw data feeds. Due to the complexity of the images, it is not recommended that they should be processed outdoors as this can give poor results. The system is useful for traffic counting and give a +/- 3 percentage tolerance, and is not appropriate for vehicular speed and their classification.

Other technology

(**Akito Higatani, Toshihiko Kitazawa, Jun Tanabe, Yoshiki Suga, Ravi Sekhar, and Yasuo Asakura 2009**).talked about the travel time reliability of an expressway Network. Used Ultrasonic vehicle detector system to measure traffic volume **(Alexander M. Hainen, et. al 2011**) used Bluetooth probe technique to calculate the travel time for different routes obtained by route classification and link distance. They used 6-8 Bluetooth from starting to end point and gave the 4 route choices and the driver route choice is according to their experience.

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