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Traffic Management Studies in Avadi

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Abstract - *Vehicular traffic increase with increase in population, industrial growth, growing commercial activities etc. Avadi in a Chennai city, which is a education hub and has a big industrial area, which attracts students and people seeking employment. Hence traffic congestion is main problem in peak hours. This project work around this problem. Our objectives are to find reason for congestion and providing best solution for the same. For these, we will do vehicle volume count surveys by manual and photographic method will try to give best possible solution is to design a pedestrian bridge which will improve traffic flow, user convenience, easy crossing of pedestrians and will reduce risk of accidents.*

Key Words: vehicle volume count, manual method, photographic method , traffic flow , reduce risk of accidents.

1.INTRODUCTION

This project involves traffic volume study, vehicle classification, traffic composition of the important route in city of Avadi. After all the surveys and observations solutions and suggestions are provided for better traffic condition and convenience of the users. Hence it is necessary to evaluate the various factors causing inconvenience to the road traffic such as congestion, travel time delays etc. The study of traffic volume will give us an idea of various locations where the congestion is prevailing leading to unsafe travel experience the consequently the various measures will be suggested to safeguard the road users. Traffic volume is simply the number of vehicles passing a section of a roadway during specified unit of time. Traffic volume studies are conducted to determine the number, movements and classification of roadway vehicles at a given location in order to 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 recorded.

1.1 AVERAGE DAILY TRAFFIC

Average daily traffic or ADT, and sometimes also mean daily traffic, is the of vehicles two-way passing a specific point in a 24-hour period, normally measured throughout a year. ADT is the standard measurement for vehicles traffic load on a section of road, and the basis for most decisions regarding transport planning, or to the environmental hazards of pollution related to road transport. Road authorities have norms based on ADT, with decisions to expand road capacity at given thresholds.

1.2 ANNUAL AVEARAGE DAILY TRAFFIC

Annual average daily traffic, abbreviated AADT, is a measure used primarily in transportation planning and transportation engineering. It is the total volume of vehicle traffic of a highway or road for a year divided by 365 days. AADT is a useful and simple measurement of how busy the road is. It is also sometimes reported as “average annual daily traffic”.

1.3 COUNTING METHODS

Two methods are available for conducting traffic volume count. They are (i) Manual method and (ii) Automatic method.

Manual counts are typically used to gather data for determination of vehicle classification, turning movements, direction of travel, pedestrian movements, or vehicle occupancy.

Automatic counts are typically used to gather data for determination of vehicle hourly patterns, daily or seasonal variations and growth trends, or annual traffic estimates.

The count period should be representative of the time of day, day of month, and month of year for the study area. Traffic management studies investigate the existing travel conditions, identify the problems, diagnose the same with the help of primary & secondary data

relevant to the study & suggest mitigation measures according to the analyses results.

2. OBJECTIVE

- The main objective of the project was to get an accurate idea of the hourly, daily, weekly, and monthly variations of traffic flow and to reduce the traffic congestions during peak hour flow.
- Manual method of vehicle volume counting enables any unusual conditions obtaining at the time of count to be recorded whereas photographic method increases the rate of accuracy of traffic volume count.
- To design and analysis of pedestrian crossing over highway in Avadi.
- To effectively convey the traffic and ultimately decreases the destination time.
- Reduces the accident rate due to the free flow of traffic.

3. SCOPE

- To provide possible solutions and improvement suggestion for the problem identified.
- The objectives covered in it includes identifying the hourly distribution of vehicles and peak hour, identify level of service and compare modal composition on different hierarchy of roads.
- Easy crossing of roads by the pedestrian without any disturbances to the traffic flow.

4. METHODOLOGY

Firstly, traffic volume at study stretch of national highway will be determined. After that safety measures along, national highways will be discussed. We don't have an instrument so we will be using the manual method of counting the vehicles. Manual counting method can be classified into (i) Direct Method (ii) Indirect Method.
Direct Method: - By this method data can be collected immediately and we can obtain the traffic volume as well as vehicle classification. We will be using this method during peak hours.

Indirect method: - In this method the traffic volume data is collected by the video camera. Video is captured &after that data is collected by rewinding. At morning and evening time, we will be using this method because of high traffic flow.

4.1. STUDY AREA

Arignar Anna statue at Avadi junction is located along Chennai- Thiruthani highway and Chennai Anantapur highway road. The junction has access to bus terminals from Avadi bus depo. The junction is very near to Avadi bus depo and Avadi railway station. Avadi is a residential locality in western part of the city of Chennai, Tamil Nadu, India. It is located at Tiruvallur district. It is a special grade municipality of Chennai Metropolitan Area.

Fig 1: LIVE TRAFFIC IMAGE

4.2. FLOW CHART

SITE SILECTION

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DATA COLLECTION

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STUDY OF LITERATURE REVIEW

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TRAFFIC SURVEY AND ESTIMATION OF TRAFFIC VOLUME BY DIRECT AND INDIRECT METHOD

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DESIGN OF PEDESTRIAN CROSSING

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STAAD ANALYSIS

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RESULT

- By the above method of surveying possible solutions and improvement suggestion for the problem identified.
- The possible solution for this project is construction of pedestrian bridge across the road.
- The detailed design and analysis of the structure are done by using AUTOCAD and STADDPRO software's.

4.3. SUGGESTIONS

- Stopping vehicles, especially autos near intersections should be restricted.
- Entry of heavy vehicles should not be allowed during peak hour flow.
- Construction of Pedestrian bridge across the road so that the traffic flow will be regular without any disturbance and delay.
- Labor markets on the road at Bus Stand should be shifted at road side vacant land.
- Alternate road should be used during peak hours flow.

4.4.STAAD PRO ANALYSIS

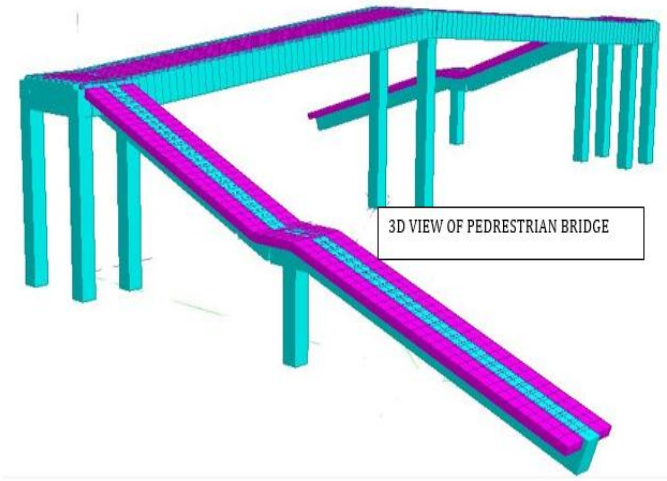

FIG 2: 3D IMAGE OF PEDESTRIAN CROSSING

5. RESULT AND CONCLUSION

- After doing traffic survey by Manual counting and Photographic method we get an accurate idea of the hourly ,daily, weekly, and monthly variations of traffic flow in the proposed location.

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