



# TRAFFIC MODIFICATION FOR ENHANCING THE SAFETY IN FRONT OF VJCET CAMPUS

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**Abstract:** The accidents happening in Muvattupuzha - Vazhakulam road is increasing unlike before. Government and elected officials are uninterested in completing the bypasses as well as correcting the unscientific alignment of SH 8 which is causing a lot of accidents. The recent growth of traffic from Thodupuzha side also contributes to the increasing traffic density apart from the MC road and SH 8. This project is based on the study of accidents in front of VJCET campus and causes of accidents. The project also aims at enhancing the safety of the students who are the internal stakeholders and also for the external stakeholders. The curves are the main cause for accidents due to overtaking, also the college zone lacks proper signs and warnings which are to be employed. The current bus bay in front of campus has to be relocated and also there is a need for the modification to be done at the college entrance gates for enhancing traffic safety. There is also a provision for the disabled persons

**Index Terms - Accident, Alignment, Traffic density, modification, disabled persons.**

## I. INTRODUCTION

The present design of the highway in front of the VJCET campus does not ensure the safety of the people using it. Therefore the present design needs to be modified in order to benefit internal and external stakeholders. To develop a safe control system in front of VJCET campus within the available area. Day to Day the accidents occurring at the highway are increased due to the improper design of the highway (SH8) and also the carelessness of the drivers. To control the overtaking vehicles. In this current scenario, the number of vehicles using the highway will increase substantially.

## II. METHODOLOGY

The proposed methodology is given below

- <sup>1</sup> Identifying the available land area for proposed design from plan of the road.
- <sup>2</sup> Surveying of land for identification of available land area.
- <sup>3</sup> Data collection of the accident occurred at curves near the VJCET campus.
- <sup>4</sup> Development of modified traffic design proposal.
- <sup>5</sup> Existing level of asphalt pavement and adjacent land is being determined.
- <sup>6</sup> Width available at different locations are determined and identifying areas where additional width is required.
- <sup>7</sup> Proposal for location of signal posts.
- <sup>8</sup> Proposal for location of merging strips.
- <sup>9</sup> Proposal for providing barrier protected pathway.

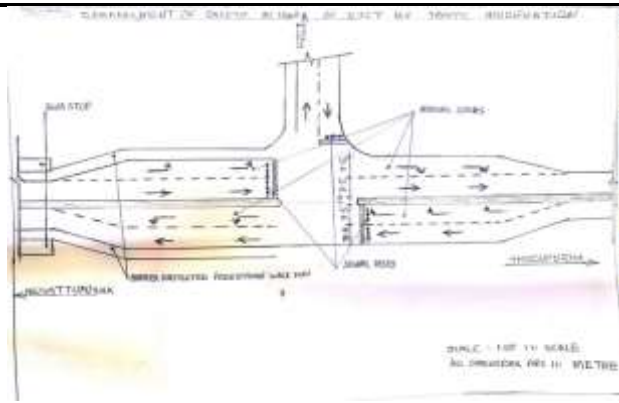


Fig.1: enhancement of safety in front of vjcet

### III. RESULT AND DISCUSSIONS

#### 3.1 Survey Using Total Station

Total station is an electronic instrument used for the surveying and also for the building construction purposes. The coordinates of an unknown point relative to a known coordinate can be determined using the total station. The shifting of the instrument is done due to any obstruction. So the instrument was shifted by marking the last point as the next station. The data recorded in the total station is converted into AutoCAD. The obtained data is also plotted in Microsoft excel sheet. The total number of points is 133. The survey was done at 2 KM stretch of road in front of VJCET. The alignment, coordinates, levels were recorded and plotted in AutoCAD.

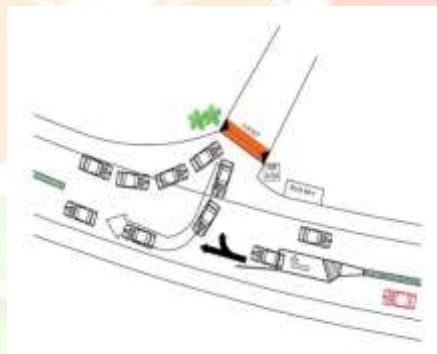


Fig. 2: the main entrance

#### 3.2 Traffic data collection

The basic requirement of transportation planning is the Traffic data collection. To get the number of accidents for the past 4 years, from the period of 2015 to 2019 by studying FIR from the Vazhakulam police station. The number of accidents was increased during each year. So the present design need to be modified to enhance the safety in front of VJCET campus.

Table 1 Data collection

Year	Number of accidents
2016	82
2017	68
2018	68
2019	72

#### 3.3 Traffic Volume Count

Traffic Volume Count is counting the number of vehicles passing through a road over a period of time. It is usually expressed as passenger car unit (PCU) it is measured to calculate the carrying capacity, identification of peak hour etc. We are counting the number of vehicles passing through the SH 8 in front of VJCET campus during the peak hour that is 8.00am to 9.00 am. The counting done towards Muvattupuzha, towards Thodupuzha, number of vehicles entering into the college and also the number of pedestrians.

Table 2.Traffic volume count

SI No.	Type Of Vehicle & Pedestrians	Flow to			Total
		Muvattupuzha	Thodupuzha	College	
1	Heavy	40	44	15	99
2	Light	274	185	32	491
3	Two wheeler	237	211	59	507
4	Pedestrians			514	514

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