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Intelligent Analysis of Traffic Congestion from G.I.T.M. to Matiyari

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Abstract- *Traffic engineering uses engineering techniques and strategies to achieve the secure time efficient movement of human beings and goods on the road. The secure and efficient movement of traffic is depend on the traffic flow condition that is directly connected to the traffic characteristics. Traffic congestion is one of the major issue and one of the main challenges for engineer planners and policymakers. In the absence of effective planning and traffic managementitcan be create number of problems like traffic jamming, road accident etc. This paper studies traffic congestion G.I.T.M. to Matiyari. In this work emphasis was given on traffic volume and the data analysis was carried out through traffic flow survey at*
G.I.T.M. BBD and Matiyari location. Traffic volume is studied by Direct manual counting method. With the help of data collection give the causes of traffic congestion at three different area G.I.T.M. BBD and Matiyari and it is also made to understand the traffic patterns during different time periods. Hence the results from the present study are helping in controlling the traffic at the G.I.T.M. BBD and Matiyari area and it also suggesting some of the remedial measures to improve the Traffic Safety in this areas.

Key Words: Traffic congestion, Pedestrian, vehicles, tactile Indicators, Traffic Volume, infrastructure.

1. INTRODUCTION

Road Traffic is the movement of the vehicles, people and goods from one place to another on the Road. The movement occurs along a path way that can be called a guide way. Today's scenario the number of vehicles and population increasing day to day basis, which results in is disintegration of traffic condition. Due to this jam and long queues of vehicles on the road. So for the safe and efficient movement of Traffic, Traffic control is necessary. Road Traffic Control is the process directing vehicular and pedestrian, traffic around a construction zone or other road disruption.

In this paper, we review research on the traffic control our locality from GITM to Matiyari. As we seen in our locality from GITM to Matiyari the traffic problem increases day by day. And this route is highly jam in morning and evening time, because of there are several number of college, school situated. For Controlling the traffic we use Traffic control system like computers, communications Device traffic signals and detectors for sensing Vehicles. The traffic control devices direct guided and provides information to the drivers by offering tactile indicators.

1.1 Objective of the study:

The main objective of the study include :-

- To identify during what time of the day traffic congest the most.
- Which part has the highest traffic.
- What is the cause of traffic.
- To suggest measure for the improvement of traffic congestion in G.I.T.M. to Matiyari.

1.2 Causes in Traffic Congestion:

In this research, we started study of traffic congestion in G.I.T.M. to Matiyari Chauraha there are several number of causes in traffic congestion.

- The major cause of traffic jam in G.I.T.M. College is missing of traffic separator and traffic signal.
- If we talk about BBD College the traffic jam occurs due to the poor signal timing.
- At Matiyari Chauraha, mostly the Traffic jam occur due to the unwanted standing of public vehicles like Auto-Rickshaw, E-Rickshaw etc. and also missing of signal and road marking.

- 20% of total traffic jam occurs at the time of morning and evening due to movement of student and official employees.
- Sometimes, the traffic jam occurs due to the reduction of the pavement width at a given point or over a certain length.

2. METHODOLOGY

In this Research we start study of traffic congestion in G.I.T.M. to Matiyari with the help of survey at different times slot and also through the Google map traffic.

Traffic Volume study :

- Traffic volume is the number of vehicle crossing ata section of road per unit time at any selected period. The unit of traffic count taken as Vehicles per hour.
- Counting of traffic can be done by two methods-

1. Mechanical Counting Method
2. Manual Counting Method

- In Mechanical Counting Method vehicles counted by automatically with the help of pneumatic device electromechanical counters without any human involvement.
- In Manual Counting Method vehicles are counted manually. There are two methods in Manual Counting :
  1. Direct Method –Vehicles is counted by using hand tally and manual counters.
  2. Indirect Method- vehicles is countered by using video camera.
- We adopt the Direct Manual Counting Method in this research by standing a person at the roadside who is recording passing vehicles at a given time interval.
- Direct Manual Counting method is the common method, which includes a group of human beings recording quantity of vehicles passing, on a predetermined area, using tally marks in inventories. Raw records from the ones inventories is then organized for compilation.
- This approach of statistics series can be steeply-priced in terms of manpower, however it's important in maximum cases in which cars are to be labelled with a number of movement recorded one at a time, together with at intersections additionally in cases in which automated methods cannot be used due to lack of infrastructure vital authorization and so on .

2.1 Area of Study:

From G.I.T.M. to Matiyari was taken as an area for the study. It is divided into 3 parts.

1. Part1: G.I.TM. College
2. Part2: BBD
3. Part3: Matiyari Chauraha

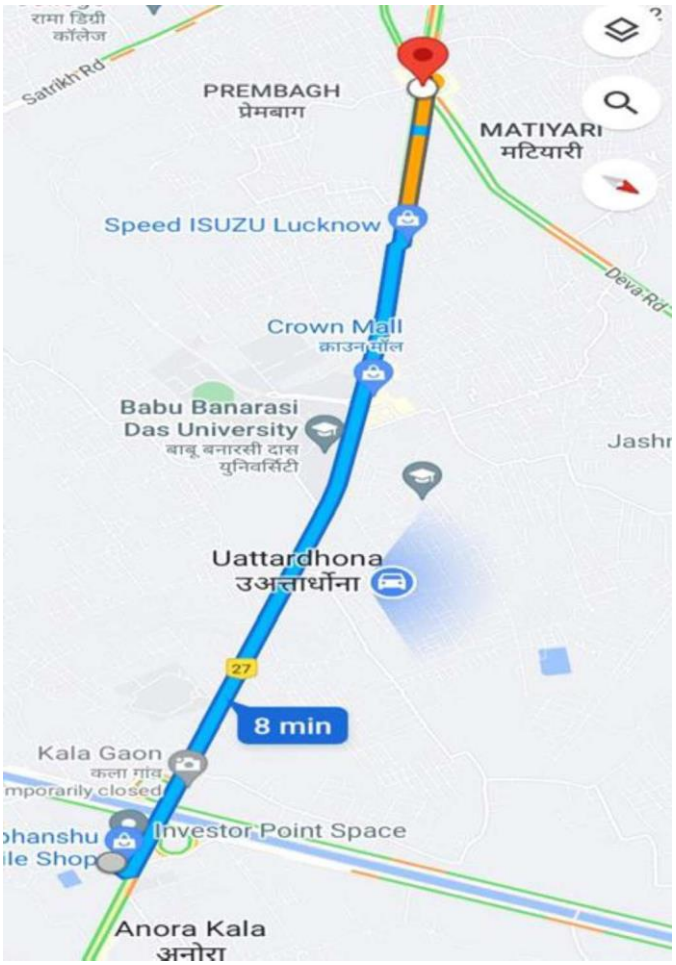


Fig-1 Area of Study

3. ANALYSIS AND DATA INTERPRETATION

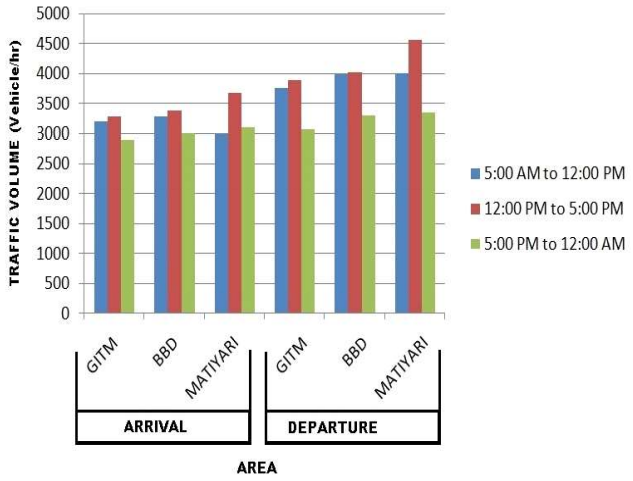
Keeping in view the objectives of the study and the nature of the study and the nature of data, the data collected were counted and shows the results in form of tables and charts.

The interpretation of data and its analysis are represented in a tabular form as follows:

- The table shows the traffic volume (in Vehicle/hr.) with respect of different slot of time i.e. morning, afternoon and evening.

Table-1: Traffic Volume G.I.T.M. To Matiyari

	Time	Area wise Traffic Volume (Vehicles/hr)					
		G.I.T.M.		BBD		Matiyari	
		Arriving Vehicles	Departure Vehicles	Arriving Vehicles	Departure Vehicles	Arriving Vehicles	Departure Vehicles
Morning	5:00 am to 12:00 pm	3200	3755	3275	3990	2990	3990
Afternoon	12:00 Pm to 5:00 pm	3720	3893	3378	4010	3675	4560
Evening	5:00 pm to 12:00 am	2900	3060	2992	3292	3100	3340



Graph 1.1: Traffic volume vs Area

4. SUGESSTION FOR IMPROVEMENT OF TRAFFIC CONGESTION FROM G.I.T.M. TO MATIYARI

There are several process can be taken for improve the traffic congestion from G.I.T.M. to Matiyari:-

- At G.I.T.M., the traffic lights and signals should be installed and marking of traffic road lines and zebra crossing line should be properly provided.
- Traffic to be monitored through Integrated Traffic Management System.
- At BBD, for the crossing of road, pedestriancrossing bridge should be provided.
- The illegal parking of Vehicles along the roadside should be prohibited.
- Shops at pathways along the roadside should be removed and widen the pathways.
- The broken traffic lights should be repair properly.
- Strictly follow the traffic rules.

5. CONCLUSION

Traffic congestion is a international challenge inside the development of sustainable and resilient traffic management system. So, on the basis of our study we can conclude that in order to solve the traffic problem from G.I.T.M. to Matiyari, the first thing to do is to install the advanced traffic signal, provide pedestrian crossing over bridge, prohibited the illegal parking, widens the pathways and also traffic road lines and zebra crossing line to be mark properly.

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