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TRAFFIC SCENARIO OF SELECTED URBAN AREA-MODASA CITY

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ABSTRACT - India is experiencing rapid urbanization with the present urbanization levels at 30% translating to a population of roughly 340 million living in urban areas. India was the fourth largest motor vehicle/car manufacturer in the world in 2016. Traffic congestion is a major problem at an intersection in urban areas. The main aim of this study is to analysis traffic scenario in selected Urban area – Modasa city also evaluation transportation system on the existing road system in Modasa city. In this study an attempt is made to solve the problem of traffic congestion and unusual delay to the traffic movement in Modasa city by analysis of traffic scenario. Analysis of traffic scenario is very important. As the evaluation of traffic scenario directly related with several traffic and motorist's parameters such as travel time, delays, accidents, parking studies, spot speed studies, classified traffic volume count, operation costs, environmental factors, etc. This analysis determine the significant parameters for traffic congestion and helpful to reduce the traffic congestion in urban area.

Key words: Classified Traffic Volume, Spot speed. Rotary Intersection, Traffic congestion

Introduction

India has one of the highest shares of road traffic fatalities in the world. India is urbanizing in a rapid rate and the absolute increase of population is more in the urban areas (9.1%) than in the rural areas during the period 2001-2011. The urban population of India is estimated to be 37.7 cr. The quick urbanization has resulted in enhanced travel demands and thereby an increase in urban transport problems. The urban traffic problems are attested with traffic congestions, accidents, unauthorized parking, poor land use, inadequate transport planning as well as poorly maintained road networks. As the traffic scenarios vary considerably compared to the developed countries, a special attention to the traffic problems in developing countries is demanded. Against the serious problem of growing and existing congestion problems in the Indian cities, smart traffic control and information techniques are required that can subsequently reduce the traffic congestion and increase demand of public transport. So this study is very useful for the reducing traffic problems.

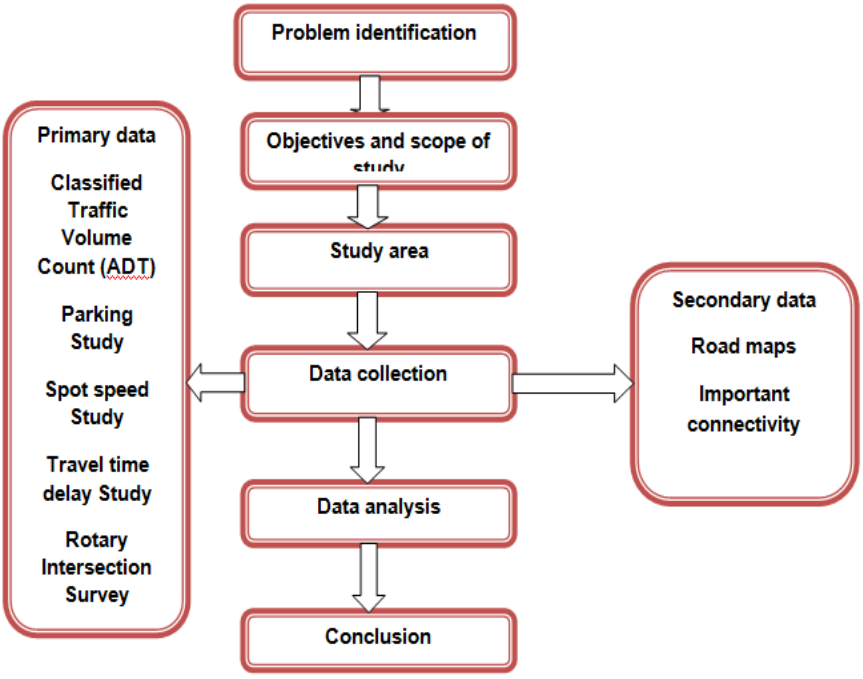
OBJECTIVES

- To study problem of public transport in Modasa city.
- To determine travel time, delays, congestion, parking in the study area.
- To suggest and manage traffic congestion for future and their control.
- To analysis the facilities available on road.
- To suggest measures to increase traffic flow capacity of roads.
- To evaluate Rotary intersection
- To know the nature of present traffic and forecast future traffic.
- To provide parking facilities on road.
- To suggest suitable measures to control speed of vehicles on road.

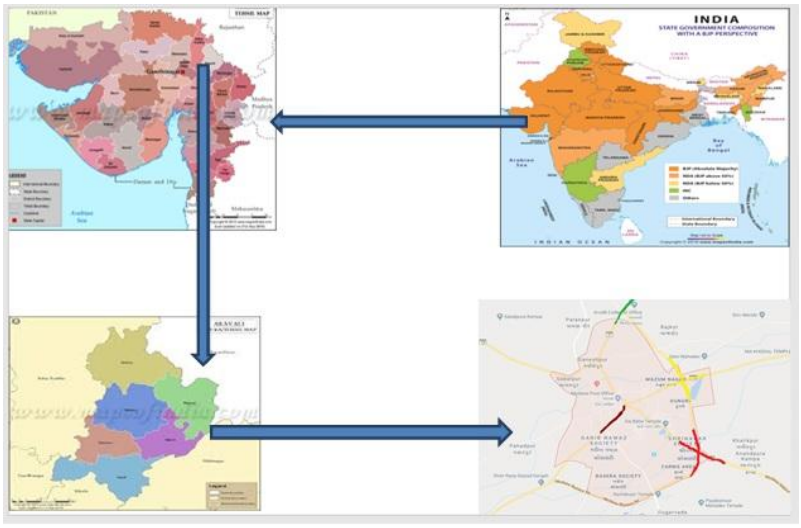
AIM OF THE STUDY

The main aim of this study is to analysis traffic scenario in selected Urban area – Modasa city also evaluation transportation system on the existing road system in Modasa city. In this study an attempt is made to solve the problem of traffic congestion and unusual delay to the traffic movement in Modasa city by analysis of traffic scenario. As the evaluation of traffic scenario directly related with several traffic and motorists parameters such,travel time, delays, accidents, parking studies, spot speed studies, classified traffic volume count, operation costs, environmental factors, etc. This analysis determine the significant parameters for traffic congestion and helpful to reduce the traffic congestion in urban.

METHODOLOGY

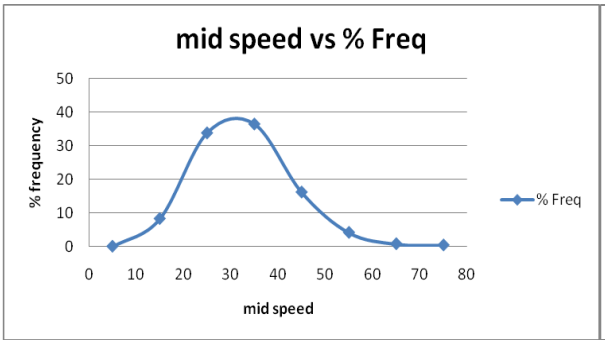


STUDY AREA

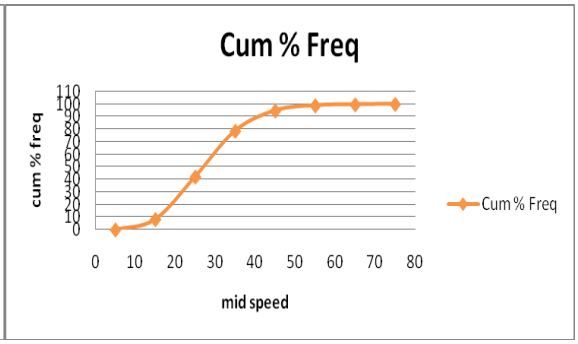


Data Collection and Data Analysis

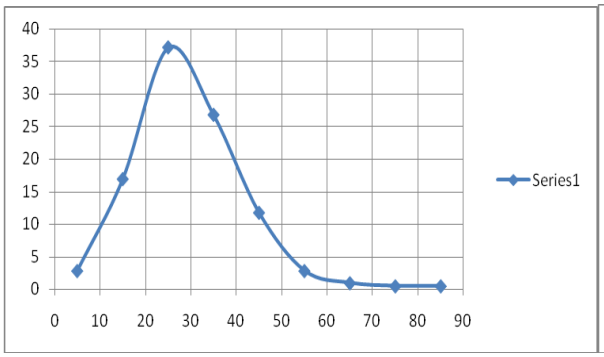
Spot speed study Modasa to Shamlaji



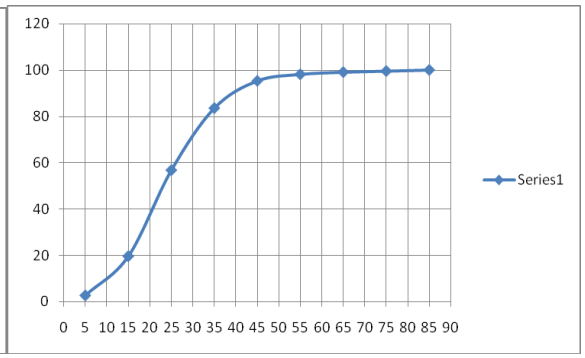
(FIG:- C1 Spot speed study of Modasa to Shamlaji with respect to frequency)



(FIG:- C2 Spot speed study of Modasa to Shamlaji with respect to cu. Frequency)

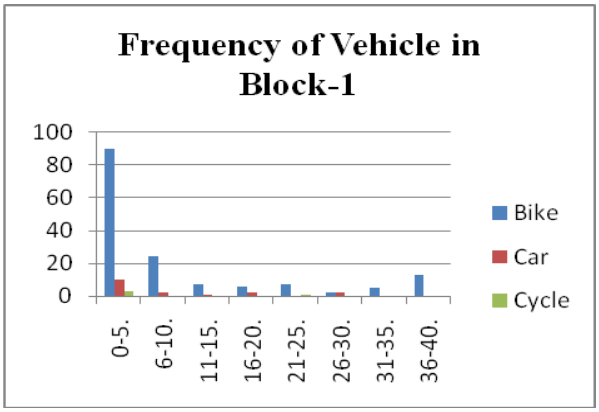


(FIG:- C3 Spot speed study of Shamlaji to Modasa with respect to frequency)

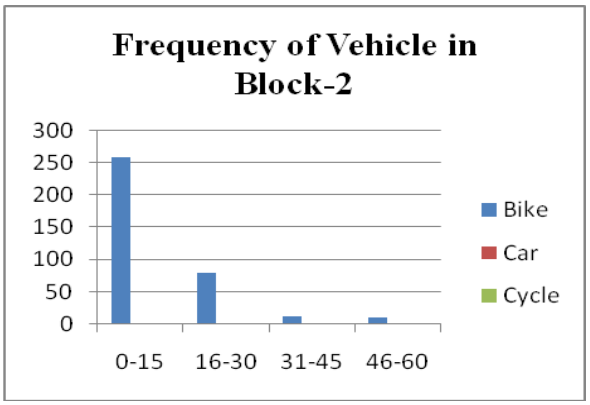


(FIG:- C4 Spot speed study of Shamlaji to Modasa with respect to cu. Frequency)

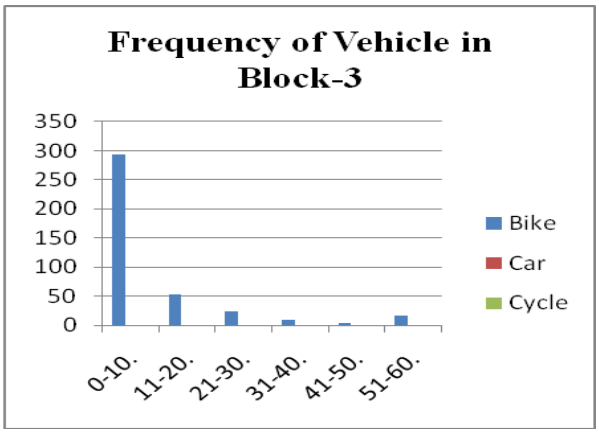
Parking survey at Modasa Char Rasta to Bus stand



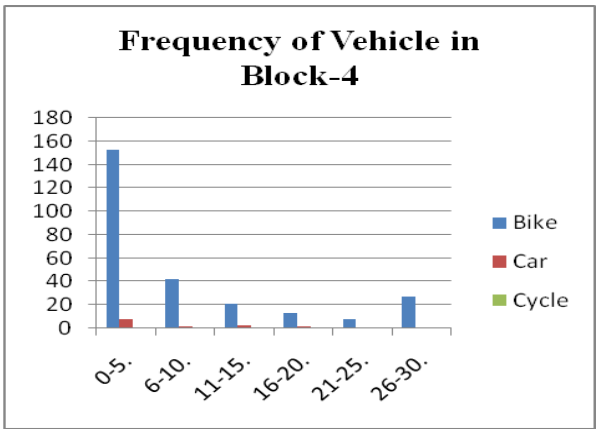
(FIG:- D1 Fre. of veh. in block 1)



(FIG:- D2 Fre. of veh. in block 2)



(FIG:- D3 Fre. of veh. in block 2)



(FIG:- D4 Fre. of veh. in block 4)

Classified Traffic Volume count at Modasa

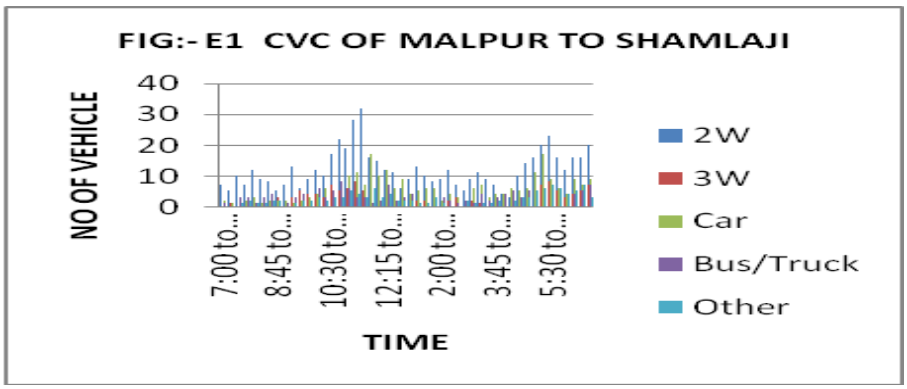


FIG:- E2 CVC OF MALPUR TO MODASA

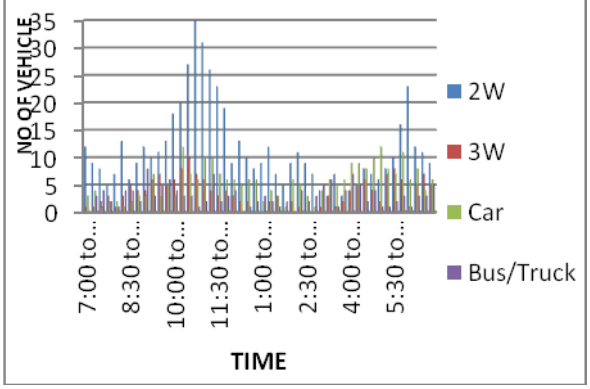


FIG:- F2 CVC OF MALPUR TO MODASA

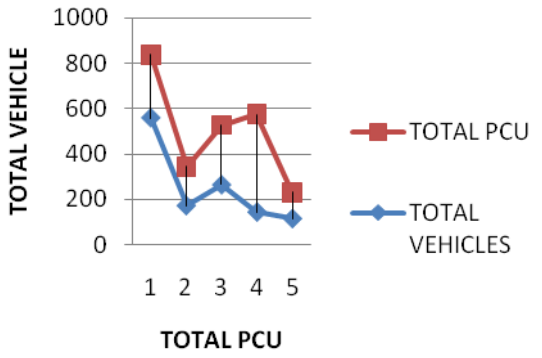


FIG:- E3 CVC OF SHAMLAJI TO MODASA

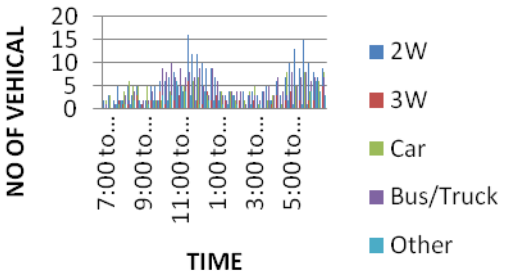


FIG:- F3 CVC OF SHAMLAJI TO MODASA

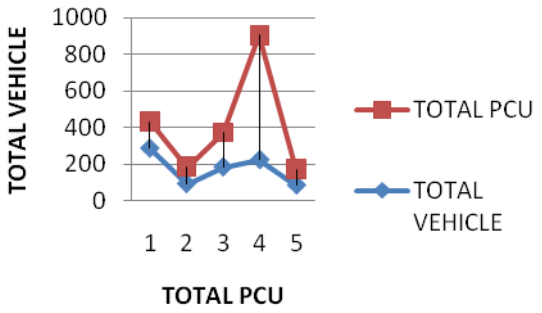


FIG:- E4 CVC of Bypass to Modasa

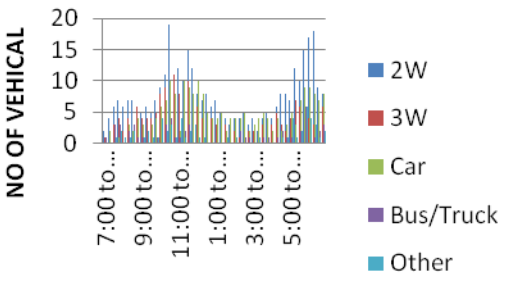


FIG:- F4 CVC OF BYPASS TO MODASA

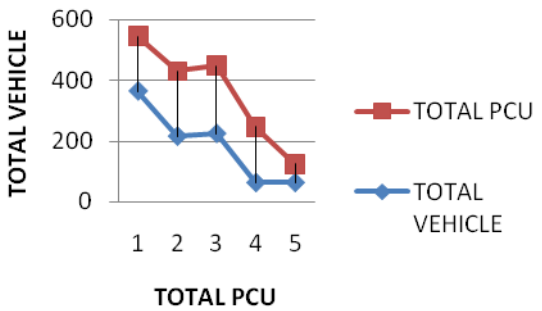


FIG:- E5 CVC OF MODASA TO MALPUR

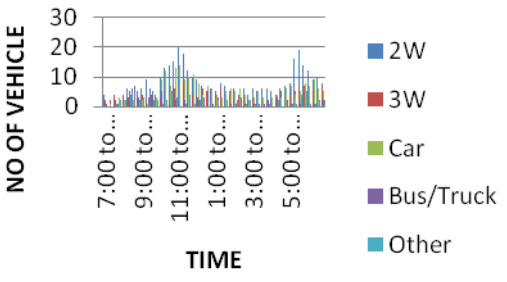
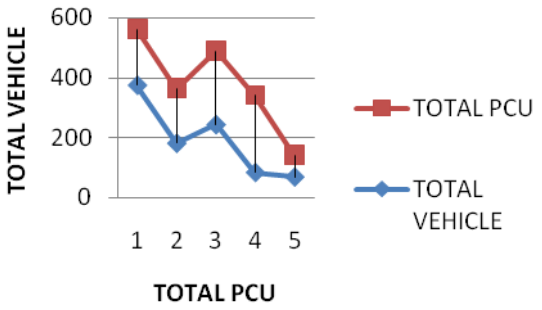
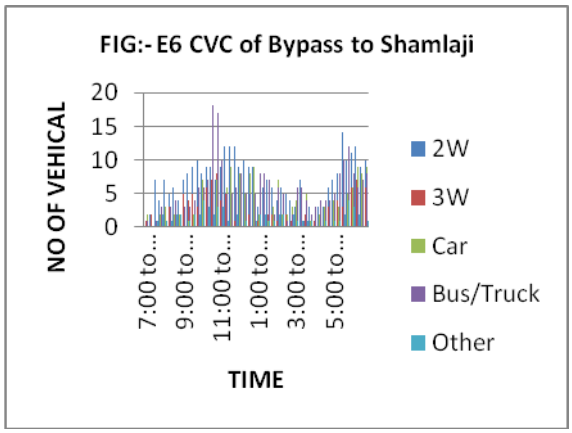
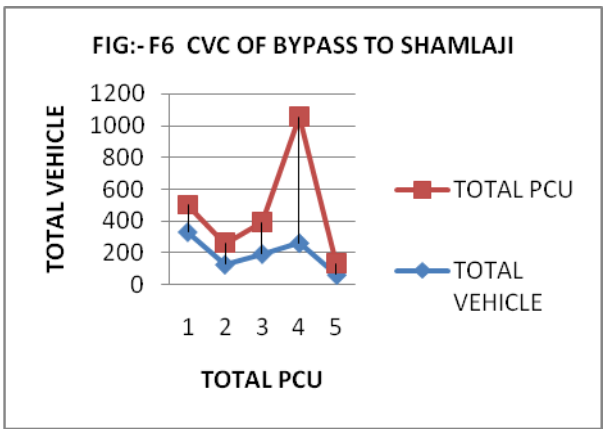


FIG:- F5 CVC OF MODASA TO MALPUR







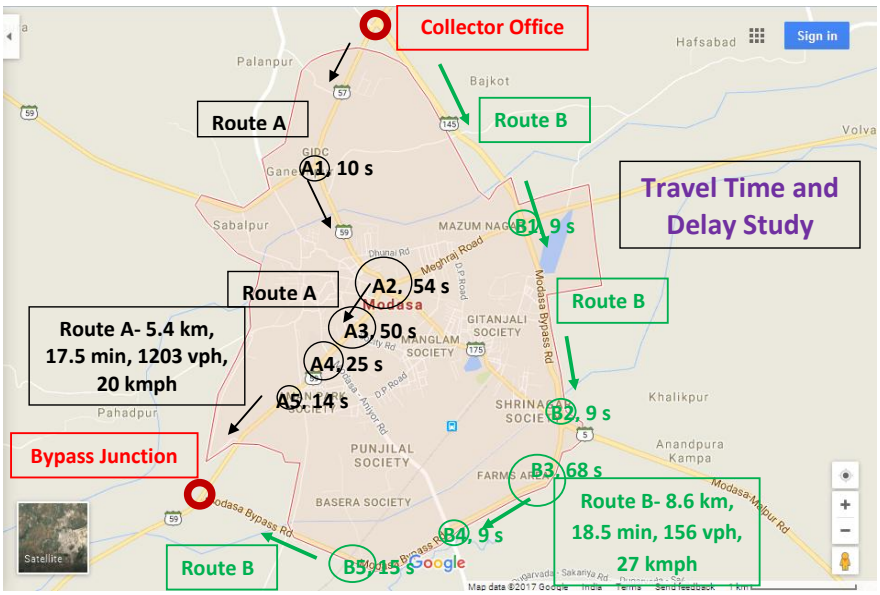
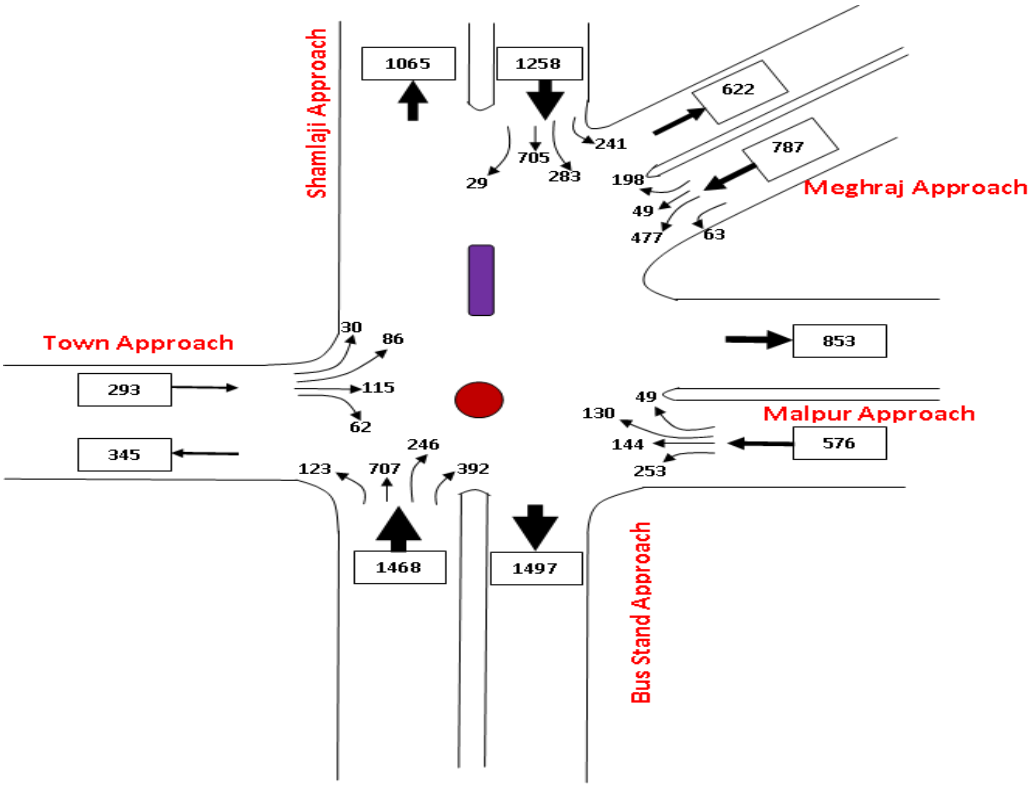


Figure G-Travel Time and Delay Study, Modasa (Evening 5 PM-6PM)

Route A Collector Office-GIDC-Hajira-SBI-Bus Stand-College-Junction		**Route B** Collector Office-Bypass-Palate-Sahyog-Dugarwada Crossing-Junction	
A1	Hajira Junction	B1	Palate Hotel Junction
A2	SBI Junction	B2	Sahyog Petrol Pump Junction
A3	Bus Stand	B3	Dreamland Road
A4	Dugarwada Road Junction	B4	Dugarwada Road Crossing
A5	College	B5	Railway Crossing



[Fig. b -Traffic Flow at Rotary Intersection Char Rasta Modasa Town]

[Survey Photographs]

CONCLUSION

As shown in figure (b) Rotaray Intersection. The flow of traffic is maximum on Malpur Approch, Meghraj Approach, Shamlaji Aproach. Alternate Route by pass Should be provided for heavy vehicles for reducing traffic. Improvement In traffic signal for the reducing traffic congestion problems.
As shown in figure G, The travel time delay at the Route B. The delay time between B1 to B2 is 101sec. The length Route is 8.6km and the speed limit is 27kmph.
Parking management is an important means of regulating motor process.
Figure no D1 to D4 shows that frequency is 90-250 of 2W which is show that 2W is significant parameter for the parking problems.
To reduce the parking of vehicles we can implement the following.
On-Street Parking: For short term measures pay and park method will be done at peak hours to control and regulate the parking. Also Space should be reduce for parking and removal of vendors and give them different space.
Off-Street Parking: For long term measures Off street parking have to be provided near CBD areas, within the radius of 200 to 500 m. Primary school and Old Bus Stand are suggested Place for the off- street Parking.
Multy- storey Parking (Vertical Parking)
Also as per space reduction we can provide Multy storey Parking at School no. 1 and School no. 2. The main advantages are
Minimum Space requirement
Minimum construction cost
Aesthetic view
Easy to operate
Traffic congestion reduce

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