

TRAFFIC CONGESTION - CAUSES AND SOLUTIONS: A STUDY OF MAHARAJ BADA, GWALIOR

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ABSTRACT: Traffic congestion problem are the very serious problem in country like India. Traffic congestion is a critical problem which happens on roads which make traffic busy. Traffic congestion challenges traffic flow in urban area .Congestion is growing rapidly and has been become a more problem today. This paper will address the causes, consequences and solution of road congestion problems in case study area and the various measures that have been develop to curb. There is increase in number of vehicles and increase number of infrastructure and people develop the problem of congestion which leads to the hazard of roads and humans. There are different conditions of traffic congestion based on cities and markets. As based on the different condition there are different solution of problem. Traffic congestion also affect our infrastructure so while providing solution to this problem we have to keep in mind that our solution does not affect the heritage value of that zone. Traffic congestion and path vendors are directly propotional to eachother. Shifting of path vendors according to traffic also studied in this paper .The aim of this is to study to find out the traffic congestion strategies and their management. This study is also useful for administrator and city planner to solve the broader problems of traffic in future

(Keywords: Congestion, Infrastructure, Heritage value, markets, etc).

INTRODUCTION

TRAFFIC CONGESTION

Traffic congestion is a major urban transport problem .Due to traffic congestion, there is possibility of accidents because of poor traffic management. To eliminate road accidents and to save precious human life it is essential to find proper solution for traffic congestion. If you live in an urban area, traffic congestion can be a major daily problem. The number of vehicles is increasing day by day, because a growing middle class can now afford to buy cars and other vehicles. Traffic congestion is happen when saturation is happen means the road capacity is low and the demand of the vehicles is high. It is said that increasing number of vehicle which was caused by the population, the inadequate infrastructure and the irregular pattern of the development are main reasons for increasing traffic congestion.

Table No.1 Diffrent views by people for traffic comgestion

Public points of views	Operator's points of views	Expert's points of views
Unplanned city roads	Insufficient traffic police	Unplanned city growth
Unplanned parking	Excessive vehicle on the road	High migration rate
Bad signals	Violation of traffic rules	Disturbed traffic management
Footpath occupied by hawkers	Rough driving	Short term plan
Over population	Rickshaws	Peak hours congestion mismanagement
Poor implementation	Unwanted Buses	

India's road conditions are not expanding / improving in proportion with the increase in vehicle numbers. This paper deals with the "MAHARAJ BADA TRAFFIC CONGESTION PROBLEMS AT GWALIOR". Therefore in this paper we are constantly involved in searching for solution of traffic problems that will give not only smooth mobility, but also economic productivity and habitable environment.

CITY PROFILE

Gwalior is a major and the northern-most city in the Indian state of Madhya Pradesh . Located 319 kilometres (198 mi) south of Delhi, the capital city of India, Gwalior occupies a strategic location in the Gird region of India. Gwalior's metropolitan area includes Gwalior city centre, Morar Cantonment, Lashkar Gwalior , Thatipur.

Population of Gwalior In 2018:

As of 2011 census Gwalior has a population of 1,564,981. The various year population is follows:

- 1. 2013 – 2.21 Million
- 2. 2014 – 2.36 Million
- 3. 2015 – 2.41 Million
- 4. 2016 – 2.59 Million
- 5. 2017 – 2.67 Million

Predicting the 2018 population of Gwalior is not easy but the population from the year 2013 – 17. As we have seen that every year the population increases by app.rox 0.092 Million people. Hence, the population of Gwalior in 2018 is to be $2.67 + 0.092$ Million = 2.762 Million. So, the population of Gwalior in the year 2018 as per estimated data = 2.762 Million.

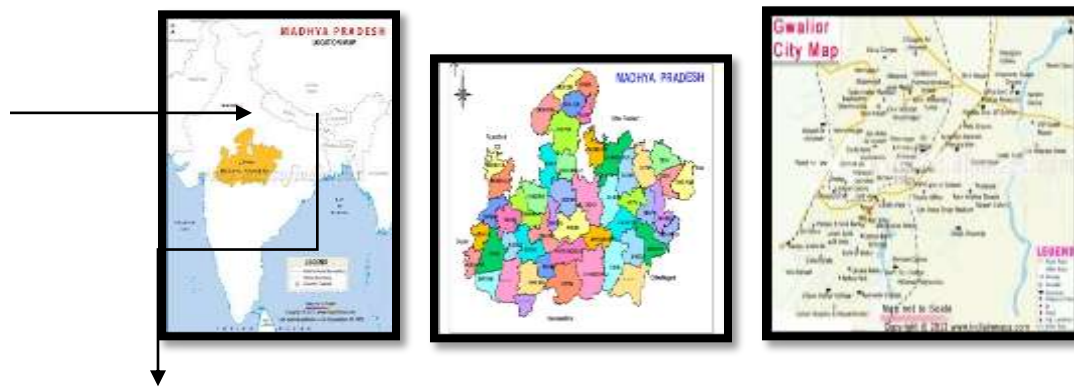


FIG1:Shows Gwalior and M.P map(Source :maps of india)

STUDY AREA :MAHARAJ BADA

Maharaj Bada or Jayaaji Chowk is one of the most significant place of Gwalior, Madhya Pradesh, India. Maharaj Bada, which is sometimes just called as Bada, is the central focus of Gwalior, with a large square, and a municipal market building.



FIG2: (Maharaj bada) SOURCE :GOOGLE MAP

It is one of the prime or important markets of Gwalior, as well as Madhya Pradesh. There are several big markets located at Maharaj Bada, like Sarafa Bazaar, Topi Bazaar, Subhash Market, Nazarbagh Market, Gandhi Market, Daulat Ganj etc. Each market has his own significant value. Apart from these big markets, there are several small markets around the Maharaj Bada area. There is a beautiful garden at large chowk, having statue of Maharaj Jivaji Rao, in the centre of it.

Surrounding:

Surroundings of maharaj bada describe the very beautiful view .It consist of:

- Victoria market
- Post office
- SBI Bank
- Bank
- Govt.Press

These all are the imp. Heritage buildings which continuously increasing the value and beauty of maharaj bada Gwalior

- Town hall
- Beautiful square
- Central library

The study area discuss the traffic problem at maharaj bada Gwalior. What will be the impact of market area on traffic circulation at CBD. Street vendors or illegal parking and the market crowd enhance the problem. we understand that there are no immediate plans to alter the traffic congestion at maharaj bada Therefore we provide new facilities to the roads or make flyovers to reduce the traffic congestion will likely occur from existing roads adjacent to the property.

There are three entrance at maharaj bada which is shown in fig 3,they also shows legal and illegal parking, roads, heritage and all surroundings.

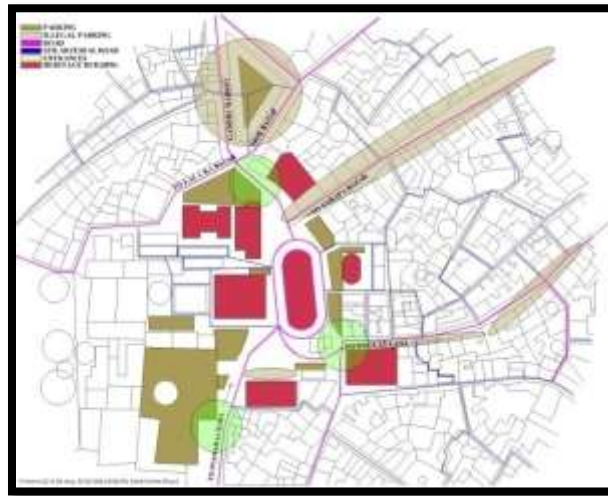


FIG3: Maharaj Bada

Total population of maharaj bada as per census 2011 as:

Total-12319(Male -6430, female-5889)

ANALYSIS

The roads are narrow compare to the population this is the major cause of jam. If we provide proper road after analyzing the traffic situation of site this will help to reduce traffic.

The second cause of traffic jams path vendors if we shift these vendors at underground market or hawkers zone then it will very helpful in reducing traffics. But these vendors still don't want to go hawkers even govt make for them why? The reason is this middle class people could not afford the mall or showroom so they come to bada for their shopping because it is reasonable for all.

There is no signage board at markets and no proper channellization of traffic means if someone want to go other area they have to cross a bada because there is alternate route but it is long so they have no option to avoid bada route this will also increase the traffic jam situation.

Parking system are also very poor at bada,the parking are generally full at every time on bada because the vehicle capacity is high and the parking area is short apart from these the govt,a lot lots of parking plots there but this is not the proper solution.people park anywhere at bada. After analyzing this situation we proposed a parking area which is sufficient for the future years.

The government is also responsible for traffic jam because they could not follow the rules and policies.

Types of survey:

Table No.2 survey method

No.	Type of Survey	Purpose
1	Roadside interview survey	To note the vehicle origin, destination .
2	Traffic count survey	To note the traffic movement during work hour or peak hour.

3	Screen line survey	To count the number of vehicles crossing the road.
4	Traffic count survey of major intersections	To optimize signal system at major intersections.
5	Travel speed survey	To analyze vehicle speed affected by traffic congestion
6	Parking survey	To note the parking demand of vehicles.

Table No.3 parking analysis

Parking survey

Parking survey	Area	No.of vehicles
Parking 1	Subhash market	600-700per/day 200-250per/day
	Govt. parking	400per/day
Parking 2	Sarafa bazaar to Daulat Ganj	600per/day
Parking 3	Library	150per/day
Parking 4	Gandhi market	150per/day
Non parking area	Sarafa bazaar,on road	500per/day

Vehicle survey

13776 PCUs in peak hour

77% short term parking demand.

Vehicle like tempo,auto,2 wheeler ,4 wheeler ,school buses are passing through maharaj bada site. There are HMV are also pass in night.

Shops survey

There are around 400 shops in shubash market and nazarbogh market. 500 shops in topi bazaar and dahi mandi. 700 shops in sarafa bazaar.

Table No.4 proposed road width

Area	Current road width(in.mts)	Proposed road width(in mts.)
Sarafa bazaar	24-27	30
Madhav ganj	12	18
Daulat ganj	18	20
Bada	18	18

IMPACT OF TRAFFIC CONGESTION

Social Impact:

Reduction in transport speed, emergency vehicles accident, encouraging mass transit, delays, road rage, infrastructure overloaded, security threats.

Environmental:

Global Warming, Fuel Consumption and pollution, Pollution, Human Health, Air, Soil and Water, noise pollution.

Economic:

Congestion, Cost of building and maintaining roads, Use of non-renewable resources, Cost of petrol Loss of work time, Goods delayed

REASONS FOR TRAFFIC CONGESTION AT 'MAHARAJ BADA'

- Inadequacy of traffic police

Traffic police in maharaj bada is less in numbers compared to other city of M.P .There are three major entrances for maharaj bada At least Six traffic police need at one point ,it is seen that the traffic instructors are short and due to the lacking of proper instruction the vehicles are getting trapped in traffic.

- Narrow roads

Roads of bada is not wide spread, due to illegal possession on the market road they are getting narrow and this is the wide reason of traffic jam.

- Illegal parking

Illegal parking on the road creates a congestion every day. The supply of vehicles is high and the demand of parking is low is the reason of illegal parking On-road this was the main reason was traffic jam on maharaj bada.

- Increasing number of population

The city are facing an increasing number of population day by day which play a vital role of mismanagement of traffic situation.

- Higher purchasing power of the public

Due to the higher purchasing power of the people of city the private transportation is increasing but the roads are same this signifies the traffic congestion.

- Improper lane management

Lane management is an important factor of managing the traffic . the vehicles try to overtake the vehicles in the single undivided road. This is the main reason of traffic accidents.

- Submerge of traffic

There is no proper dividation of actual traffic

vehicles .No proper lane for public transportation or private transport is provided this make a traffic jam in some condition.

- Street vendors

This was the major cause of traffic congestion in maharaj bada area,these vendors is sit on the road for their good sales of material and block the road traffic.

- Peak hours congestion mismanagement

There is no solution for the peak hour traffic management govt has to be appoint some traffic police for that hours became useful for that.

SOLUTIONS FOR THE TRAFFIC CONGESTION

- Proposed Underground street vendor market at front of Victoria market and on ground floor plan a beautiful garden as similar to Connaught place.
- Multilevel parking at Gorkhi Ground(four wheeler park at ground floor and two wheeler park at typical floor,when there is a festival ground floor is used at vendors shopping)
- Underground lane for 2 wheeler from roxy pull underground bridge to Sarafa bazaar .
- Proper dividation of road should be done.
- Front of shubhash market proposed underground market for vendor.
- Proper channelization of tempo and buses should be done.
- At school leaving time 2-3 the tempo route should be divert because the school buses and schoolvehicle has difficulty to move from the jam.
- Heavy motor vehicle should not enter at peak hours(12-8).
- Peak hour traffic management should be maintain by traffic police
- From gorkhi to sarafa the vehicle lane should be clear.
- All the entrances of the market should be clear.
- Proper work can be done by the traffic police.
- Use Intelligent Traffic Monitoring System

SUGGESTION

The problems faced due to the impact of market area on traffic congestion, it is suggested that the town planners and the traffic management planner should coordinate with the policy makers of city development authority. Proper study of traffic congestion should be done and solution of the problem should be taken.

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