



Research Paper

## Traffic Congestion And Possible Solutions A CASE STUDY OF ASANSOL

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**ABSTRACT:** *The traffic condition in third world countries like India on urban road pose serious problem [2]. The high increase in number of vehicles on road and increasing urbanization leads to problem of congestion, which further leads to complication and hazard on the cities road [1]. Asansol city already suffering in terms of infrastructure as well as operational efficiencies [1]. Considering the regulation and infrastructure gap on city road this paper first describe the factor causing the congestion on the city road and after that present some recommended measure like rationalize the design of road, implementation the regulation for road users [1].*

**Keywords:** *Congestion, Forced occupancy, Population growth, Practical solution, Regular monitoring.*

### I. INTRODUCTION

Most of the cities are undergoing multifaceted problem because of rapid urbanization [1]. Traffic congestion is one of the intolerable problems of urban area emerging due to sudden increment in the private transport, affecting urban society, economy [1]. Road traffic congestion poses a serious challenge for all large and growing cities [3]. Congestion prevents the movements of traffic, leading to the intolerable increase journey time [1]. The aim of the paper is to provide a strategic vision, conceptual framework, logical sense and guidance on some practical idea to manage congestion in such way as to reduce its overall impact on individual and society [3]. The conventional as well as traditional approach construct new road is a temporary relief but it does not work always for variety of reason like political, environment, financial, moreover it may encourage the growth of new vehicles and forced occupancy [1, 3]. Against the serious existing problem this paper have introduced some practical and logical solutions for Asansol city like-changing the route system ,regular monitoring, suitable parking management system, demand of public transport, which are supportable both physically and economically for local govt. Therefore we are constantly involved in searching for traffic solution that will give not only smooth mobility, but also economic productivity and habitable environment [3].

### II. OBJECTIVE

The main objective of the study is to identification the actual cause behind the congestion and provided the practical solutions for Asansol city to reduced congestion.

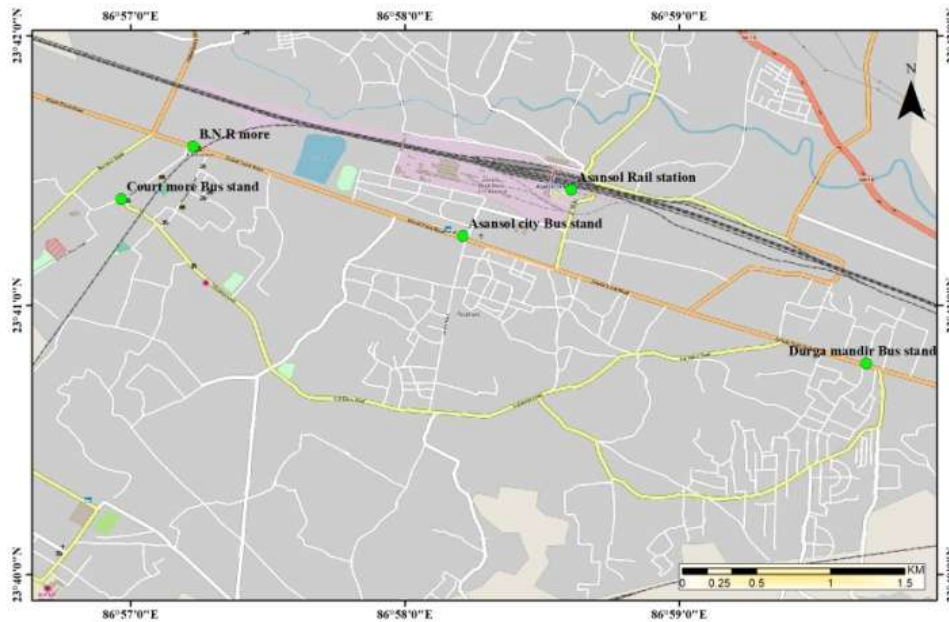
### III. METHODOLOGY

This paper is generated on the basis of primary and secondary data. The first step selecting the indicator to highlight the congestion that is the flow diagram, and snapping the images. To carry out primary data the data has been collected through survey method-counting the vehicles movements from 9.30a.m to10.30a.m comprising a total no of 3247 vehicles, standing on the different meeting points of study area to show volume of movements. Snapping the images at peak hour and also non-peak hour to show comparison of different situation on different time. To know the actual situation and get possible suggestions about the problem no of listed questions have been asked among 60 peoples randomly which are pedestrians, bus drivers, vehicle owners, and retailers since 4 days. The secondary data have been collected from journals available on internet, R.T.O Office, Bus Association Office about vehicles number, Bus number are running on city road for daily purpose. All the methods are carried out in systematic way first data collection, data processing, data analysis, and last presenting the data in a right way.

### IV. STUDY AREA

Asansol city is the second largest city in west Bengal after capital city Kolkata, lies between the longitude 86.99E -23.68Nlatitude, between the Damodar and Ajoy River. According 2011 census the population 1156,387 with density 3,500sqkm.Asansol ranked 11<sup>th</sup> among Indian cities and 42<sup>nd</sup> in world fastest growing

cities. The route is taken as study area is the busiest and nodal route of Asansol city. In the Asansol city all most all significant places are lies within the study area. The Asansol court, S.D.O Office, R.T.O Office, Asansol jail, no of braches of banks, Asansol Girls 'college, or way to other colleges, the main Asansol market areas, business offices, no of schools, Asansol rail junction etc. The study road is the easiest way to reach to the significant centers within city area or periphery area. In one word this route is the 'heart' of the city.



**Fig.1:** location of study site.

## V. IMPACT OF CONGESTION

Road traffic jam is a major problem in most cities in India, due to poorly planned road network, presence of small critical area which is common hot spot for congestion [4]. There are some effects of congestion listed here:

- 5.1 Congestion means just waste of valuable time. The wasted time could effectively used in productive work [1].
- 5.2 The slowing speed vehicles or sudden stop and go driving pattern in traffic leads to more fuel consumption resulting emission of pollutant gas[1].
- 5.3 The noise pollution has proportionate relation to traffic congestion. In office time hour it crosses 90dB, harmful to our health.

## VI. CAUSE OF CONGESTION

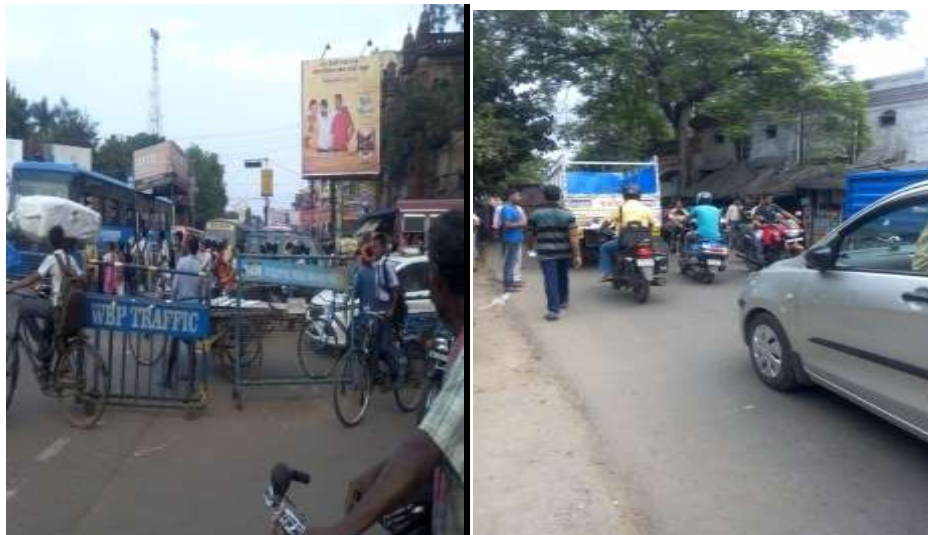
The traffic congestion is a situation on road networks when physical uses of road by vehicles increases. It occurs when road network are no longer capable to accommodating the volume of movements that used by them and it is characterized by slow speed, long trip timing and high vehicular queuing.

- 6.1 Increasing growing population in Asansol cities Rapidly growing population by birth and migration facing an unexpected congestion on road. Better facilities like-communication system, medical facilities, educational institution leads to heavy traffic.
- 6.2 Improper planning Asansol is one of the oldest city within west Bengal, so proper planning were not done that time and in modern time growing urbanization leads to more worst.
- 6.3 Forced occupier The retailer forcedly set up their business along main city road or bus road and pavements causing narrowing the road.



- 6.4 Random parking The illegal and random parking on main road is common habits of drivers and riders, causing unexpected congestion any time.
- 6.5 Fig.2:occupancy by business shops on the road
- 6.6 Irregular public transport Irregularity of public transport courage the people to depend on private vehicles.
- 6.7 Increasing rent Increasing rent within short distance of public transport is one the of the reason to depend on private vehicles.

## VII. EVIDENCE OF CONGESTION



**Fig.3:** traffic condition at 10.30 a.m bus stand & court more.



**Fig.4:** traffic condition at 2.30 p.m bus stand & court more.



Fig.5: parking along the main road.

Table 1: Data sheet of Flow Diagram from 9.30a.m-10.30am

Origin	Destination	Bus	Auto	Bikes	4-Wheelers
Court more	B.N.R more	139	147	365	239
B.N.R more	Bus Stand	90	153	379	252
Bus Stand	Station	32	159	327	51
Bus Stand	Durgamandir	243	99	465	107

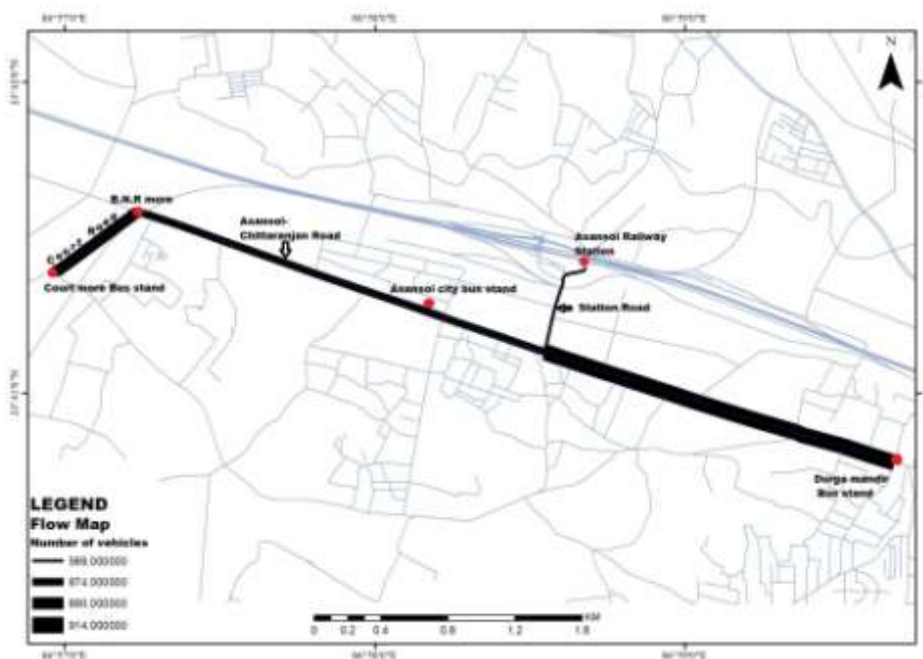


Fig.6: flow diagram show volume of transport modes.

Through the diagram we can see maximum no vehicles are on Bus stand to Durga mandir route due to location of Asansol Bus stand the most accessible point, the Asansol main market area, several schools, business houses, service centers, automobile repairing centers etc. Through the road we can connect to N.H-2 road which further links to city Kolkata, city Raniganj, city Durgapur, dist Bankura, dist Birbhum, dist Purbo Bardhaman. The second one B.N.R more to Court more where located the Asansol court, S.D.O Office, R.T.O Office, Asansol jail, main branch of State Bank of India, Asansol Girls 'college, and this route connect to Buranpur city. Third one B.N.R more to Asansol Bus Stand is the only main shortest road to reach from Asansol Bus Stand to Court more or vice-versa. Fourth one Asansol Bus Stand to Station road easy to understand the cause of congestion. But in comparison to other study road it has less volume because there are so many intra-city routes which connect Asansol Station reducing the congestion.



## **VIII. SOLUTION TO CONTROL CONGESTION**

- 8.1 Clear the footpath The enforced concentration of small shop along the foot path shorting the main road. So clearing the footpath will give a solution. Regular monitoring by administration will prevent such kind of occupancy.
- 8.2 One way routes The Asansol city has two way transport route system, creating congestion. If we started on way route system like Bus stand to Raha lane via station road for going and main road for coming may give a greater relief from congestion.
- 8.3 Change the route Instead the bus route court more to B.N.R via Ghari more the route should be court more to B.N.R more via police line road, lighting the congestion. Only private vehicles allow along the existing road but there should be a specific place for parking from a moderate distance of court.
- 8.4 Proper parking system Set up one or two multistory building and arrange a vacant place will give the solution of random parking and parking congestion.
- 8.5 Construct short fly over Construct the short fly over at the meeting road for all age's pedestrians lighting the congestion.
- 8.6 Set up office complex Like salt lake town of Kolkata, a vacant area should be arranged to set up office complex to reduced movement from here to there. In addition the exiting office along the main road where gathering occurred can be shifted to the vacant area.
- 8.7 Selective transport mode At the office hour time the slow motion transport media like rickshaw, cycle should not be permit, only bus, cars, bikes are allow along the main city road.
- 8.8 Minimum bus stoppageMaximum one or two stoppage should be along the main bus route to avoid congestion.
- 8.9 City service bus Start the available city service bus system where all the personal cars or vehicles parking in a specific place and provide a ticket to individual cars or vehicles owners which can use for bus journey In same fair from the parking land within city area.

## **IX. CONCLUSION**

Now traffic congestion became common problem for all urban cities also for Asansol city. The prime reason of traffic congestion in Asansol city is occupancy by various menace. In this paper I study the actual cause behind the congestion through primary survey and observed the situation of the road at peak hour (9.30am-10.30am). Based on the analysis of current situation, the paper present some logical solutions which are available within Asansol transport system only need proper execution in a right way. The advantage of the paper is the recommended solutions is supportable by financial condition, less harassment to common people, safety from accident, reducing trip delay, and welfare for city environment. But in case of implementation there may come constraints like-lake of regular monitoring system, lake of operational efficiency, delay in implementation etc. By considering the policy gap the above maintain solutions can mitigate the congestion in Asansol city at greater extent. Keeping in view the essentiality of time and population growth The Asansol Municipal Corporation needs to implement such kind of solutions to maintain proper traffic flow.

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