iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 6 **Issue:** VI **Month of publication:** June 2018

DOI: http://doi.org/10.22214/ijraset.2018.6086

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 6 Issue VI, June 2018- Available at www.ijraset.com

Traffic Analysis of Srinagar City

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Abstract: ***Traffic congestion has become a huge urban transport problem in Srinagar city. Traffic congestion is a situation in which vehicles occupy certain section of road. Traffic congestion in Srinagar city has become day to day problem. It is due to the increasing migration of rural population to the urban centers for different purposes which in turn has lead to the growth of vehicle ownership and has added to traffic congestion. Poor traffic management is also responsible for traffic congestion. Traffic congestion can lead to possibility of accidents. So, it is important to find a proper solution to traffic congestion. Srinagar city has witnessed increase in the usage of private vehicles (cars, motorists etc.) particularly in the last one decade. The city commuter's preference of private vehicles over poor public transport system has broken the user- equilibrium principle resulting in traffic congestion on road networks. Traffic congestion has resulted in wastage of time, Delay in movement, increase in travel time, and increase in fuel consumption, environmental pollution, and poor operating conditions. The main aim of writing this paper is to highlight the traffic related problems in the Srinagar city and the measures that should be taken to reduce the traffic congestion in Srinagar city and to propose the measures & policies that should be implemented to revamp the public transport system. The public transport system in the city should be made comfortable, easily accessible, efficient and convenient. So, more and more people are encouraged to use the public transport system which in turn can help to reduce the traffic congestion on the roads.***
Keywords: vehicles, commuter, motorist, congestion, road network, transport system.

I. INTRODUCTION

Traffic congestion has been the universal problem for most big cities. Traffic congestion is one of the worldwide urban problems which have led to increase in journey time, increase energy consumption, increase in environmental pollution and result in traffic accidents. Traffic congestion can paralyze the entire urban transportation system and hence development will be restricted. Urban traffic congestion is a significant & growing problem in many parts of the world. As congestion keeps on increasing day by day, the conventional approach of "Building more roads" doesn't always work for a variety of political, financial & environmental reasons. Building new roads can actually compound congestion, by inducing greater demands for vehicle travel that quickly eat away the additional capacity. Traffic congestion control techniques and information systems are needed that can substantially increase capacity and improve traffic flow efficiency. Application of intelligent transportation system (ITS) technologies in area such as road user information and navigation systems, improved traffic control systems & vehicle guidance & control systems has significant potential for relieving traffic congestions. Traffic congestions & the cost of providing mobility are compelling issues to planners, decision makers & members of both the business community & general public. New road construction can temporarily relieve congestion but it will simply increase further growth in traffic through increased travel and a switch away from public transport. Intelligent transportation system (ITS), Google maps & GPS (Global positioning system) has now emerged around the world to help solve transport problems. ITS can greatly help in reducing congestion, accident & environmental related impacts. ITS can also help to improve the efficiency of commercial & public transport. ITS can also reduce the need for expensive new transport infrastructure by maximizing the efficiency of our existing facilities. Srinagar city is facing acute traffic congestion. Situation is worsening day after day. This is despite the fact that some flyovers have been built and road widening of the NH-1A has also been in progress. But the population of the city is increasing and the number of private vehicles is also increasing with leaps and bounds. May be that indicate economic growth and stability among the people. The real reason of traffic congestion in the city is caused by converting residential quarters and houses into commercial units for big malls, show rooms and hotels and restaurants. Occupying of roads by street vendors and ever increasing number of vehicles has created chaotic traffic situation in Srinagar city. The roads which were built many decades ago were not widened to accommodate increasing vehicular traffic. According to the traffic department, 50,000 new vehicles are added to the road traffic every year in Kashmir. The narrow roads and increased traffic is the main cause of traffic bottlenecks at several places in Srinagar city. One fourth of total space is allocated to roads, which is mandatory for a modern city but Srinagar city is a far from this figure. There is also a huge deficit of traffic signal men who control traffic on busiest spots of city's roads. Most of the roads also remain occupied with cars parked by shopkeepers and customers and hence badly affecting the

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smooth flow of traffic. Most of the vendors have occupied roads and footpaths. The Footpaths meant for pedestrians have been occupied by vendors creating traffic chaos in the Srinagar. The vendors on both sides of the road, selling textile items, cosmetic collections, vegetables and fruits, have extended their carts on roads thus creating unnecessary traffic mess and narrowing the space for movement of locals. The Srinagar is spread over 417 sq.km having a population of around 13.9 lakhs comprising of 64% and 38% of the urban population of valley and total state population respectively. The world famous tourist destination is now facing two uphill planning challenges: Mitigating "Traffic congestion and floods". The latter is due to messy planning, illegal constructions and unregulated colonies on flood basins. The urban sprawl has come up at the cost of wetlands along the low-lying areas ringing flood alarm bells. The result is that a few inches of rainfall now inundate the whole city roads and submerge houses.

II. CONGESTION

Congestion usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are much slower than normal or "free flow "speeds. Congestion is a condition in which the number of vehicles attempting to use a roadway at any time exceeds the ability of a roadway to carry the load at generally acceptable service levels. Congestion is a travel time or delay in excess of the normally incurred under light or free flow travel conditions. There are two principles categories of causes of congestion and they are – micro level (e.g. relate to traffic on the road) and micro-level factors that relate to overall demand for road use. Traffic congestion in urban area is often the outcome of successful urban economic development, employment, and housing and cultural policies that make people want to live & work relatively close to each other & attract firms to benefit from the gains in productivity thus derived. There are many indications that, even though they may not be thrilled by the prospect, urban road users are prepared to live with crowded roads so long as they derive other benefits from living & working in their cities. Congestion prevents us from moving freely & it slows & otherwise disrupts the conduct of business within urban areas. However, it is important to note that unfettered movement is not the primary benefit we derive from living in urban areas. Cities provide access to a wide range of activities, people, services, goods, markets, opportunities, ideas & networks. These benefits can be delivered either through speed or through greater proximity. Congestion may affect travel speed but in some circumstances such as dense urban cores, congestion may both be expected and, to some degree, accepted. In these cases, cities have come to accept a degree of congestion & continue to get along relatively well as long as overall accessibility is high.

III. IMPACTS OF CONGESTION

Congestion involves queuing, slower speeds and increased travel times, which impose costs on the economy & generate multiple impacts on urban regions & their inhabitants. Congestion also has a range of indirect impacts including the marginal environmental & resource impacts of congestion, impacts on quality of life, stress, safety, as well as impacts on non-vehicular road space users such as the users of sidewalks & road frontage properties.

IV. REASONS, BEHIND TRAFFIC CONGESTION

A. Inadequacy of traffic police

Traffic police in Srinagar city is inadequate in numbers as compared to the other cities in India. Due to lack of traffic police man, vehicles are getting trapped in traffic jams, thus leading to traffic congestion. All the intersections & vital points in the city need enough traffic police man to instruct & guide the traffic in the city.

B. Narrow Roads

Due to the illegal possession of the road by the street vendors & other road encroachments, roads in the Srinagar city are getting narrower. Thus are becoming a reason behind traffic jams. So, these encroachments needed to be removed so that capacity of a road can be increased.

C. Illegal Parking

Illegal parking on the road is creating congestion everywhere in the city. On – street parking of vehicles is one of the main reasons behind serious traffic congestion in the city.

D. Increasing Number of Population

Population of Srinagar city has drastically increased in the last one decade. This rapid increase in population has lead to increase in vehicular traffic growth & hence lead to traffic congestion.

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E. Increase In Private Transportation

Srinagar city has faced increase in the private vehicle transportation which has led to increase in the number of vehicles on the road. But the existing capacity of the road and only the number of vehicles has increased. So, this has led to traffic congestion.

F. Improper Planning Of The City

Improper planning, illegal constructions and faulty design construction of the roads has restricted the city's development. Structures along the roadside are also responsible for the traffic congestion, as there is no scope for road widening along that road. Hence adding to traffic congestion.

G. Improper Lane Management

Lane management is an important fact in managing the traffic in Srinagar city. Different types of vehicles try to overtake the vehicles even in the single undivided road. Most of the city roads are unequipped with the lane dividers which divide the lane into incoming & outgoing traffic. So this factor is also responsible for the traffic congestion in Srinagar city.

V. MEASURES TAKEN TO REDUCE TRAFFIC CONGESTION

The following are the measures which should be taken to ease traffic congestion in Srinagar city:

A. Strict Lane Management

Different lanes for different type of vehicles should be marked on the roads & law i.e. financial penalty should be imposed to make the drivers maintain the lane discipline.

B. Restricting routes for Auto-Rickshaw

Auto-Rickshaw should not be allowed in all the routes of the city. RTO should take some responsibility to control the increasing number of rickshaws by imposing registration fee & legal documentation.

C. Use CCTV to monitor road conditions

Use of CCTV at junctions allows traffic managers to see breakdowns, collisions and other causes of congestion. Combined with good communication systems, the police and major road users, this can ensure traffic managers receive advance warning of issues that will impact their network.

D. Financial Penalty To The Traffic Violators & Suspension Of Licenses

Government should take strict action against the traffic violators & suspend their licenses. They should be made to dissuade the drivers from certain congestion causing –habits such as wrong overtaking, one way driving. Awareness should be created among all the people related to traffic rules & make them understand the importance of obeying traffic rules.

E. Improve Perception Of Buses

There is need to change the perception among the commuters related to the buses. We should try to revamp and promote the public transport system so that people will be encouraged to use public transportation. Better facilities needed to be provided in the public transport so that passengers can travel at comfort without any inconvenience.

F. Supply & Demand

Congestion can be reduced by either increasing road capacity (supply) or by reducing traffic (demand). The road capacity can be increased in a number of ways such as adding more capacity over the whole of a route or at bottlenecks, creating new routes & improvements for traffic management. Reduction of demand can include parking restriction, park and ride, congestion pricing, road space rationing, incentives to use public transport & introduction of e-education, e-shopping & home based working options will reduce the number of people travelling.

G. Improving present Road Infrastructure

The present Road infrastructure of the Srinagar city should be improved so as to provide better facility and improved Level of service to the Road user. Extra widening of roads should be carried out so as to increase the capacity of the roads. Fifteen main intersections in the city need immediate improvement measures like geometrical rotator and signalization improvement.

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H. Increasing & Developing The Man Power (Traffic Police)

As the city is running with inadequate amount of traffic police than required, so it is the need of the hour for the authority to increase the number of traffic police. They should be enough educated and better trained so that they can tackle the traffic management with ease.

I. Road widening

Road widening should be carried out in the city so as to ease the traffic congestion. Road widening will help in accommodating the extra traffic rush especially during peak hours. It should be carried out at important intersections & vital points which are prone to the frequent traffic jams.

VI. SOME PROPOSED MEASURES TO STRENGTHEN THE PUBLIC TRANSPORT SYSTEM

A. Revamp Public Transport System

The city traffic data shows that mini-bus trips are 60% and walk trips 22% which reinforces the need to revamp public transport system and that will require nearly one sixth investment as compared to construction of bridges (60 crore per km). Special attention needs to be given for optimizing, routing, scheduling and synchronizing problems prevalent in city bus transit. The goal is to provide the best mobility to the commuters at minimum cost by increasing bus frequency. Maintaining a timetable prepared on the basis of demand will improve the reliability by ensuring maximal smooth transfers from one route to another without wastage of time. Policy makers, researchers and stakeholders should come forward to spread word among people and create a positive public opinion in order to encourage use of public transport.

B. Introducing Bus Rapid Transit

The introduction of Bus Rapid Transit for a road network will maintain decent speed of buses by giving it separate lane without mixing with other traffic while safeguarding cyclists and pedestrians by encouraging engineered road space along the proposed corridor.

C. Making Tougher Car Ownership Laws

J&K government needs to implement tougher car ownership policies, taking clue from countries like Singapore and China. To cap more than one car ownership, quota system known as “certificate of entitlement” should be implemented which ensures first bid for the certificate before purchasing a new car.

D. Promoting Walk trips and Footpath Improvement

Srinagar city is surrounded by parks, lakes and mountains with lukewarm climate and remains abuzz with tourist flow from all over the world. So encouraging walk trips and improving footpaths shall be fruitful. The walk trips will in turn lead to bus trips. Share of cycle traffic is as low as 0.5% and needs to be promoted.

E. Increase in Parking Lots

Presently there are only 9 parking lots catering to city’s parking demand, while the peak hour demand is much higher. More parking lots need to be identified and parking charges should be increased to discourage car trips.

F. Transport Planning Unit (TPU)

Presently there is no proper technical body responsible for making policies related to transport planning, traffic engineering road safety, enforcement and regulation rules and environmental protection. PWD deals with the road construction and maintenance. Traffic Police looks after traffic management in the city.

There are numerous issues of proper road geometrics, traffic circulation, junction design, traffic signals, road signs/markings, etc., which are not properly addressed by these agencies due to lack of traffic engineering expertise.

Traffic planning is a continuous affair. It is therefore recommended that a “Traffic Engineering Cell” be established in PWD having qualified transportation engineers and planners. This will go a long way to improve the traffic flow in Srinagar.

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VII. CONCLUSION

On the one hand administration is concerned about growing traffic congestion in the city but at the same time the state transport policies continue to encourage use of private vehicles without putting a cap on the upper limit of car ownerships. Bank loans favouring easy car purchases should be stopped and stringent car ownership need to be implemented. Srinagar has captive users for buses and non-motorized vehicles (around 80% of trip makers) who, despite the poor public transport system, continue to board buses, walk and travel in overcrowded mini-buses. Special attention is needed for optimizing, routing, scheduling and synchronizing problems prevalent in our bus transit system.

The bus travel in the city should be made cheap, comfortable and without wastage of much time for the commuters. Maintaining a timetable prepared on the basis of demand will improve the reliability of public transport. Instead of giving more incentive and road space to private vehicle owners and spending lavishly on bridges and flyovers, there is an urgent need to revamp and promote public transport system in the city

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ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887
Volume 6 Issue VI, June 2018- Available at www.ijraset.com

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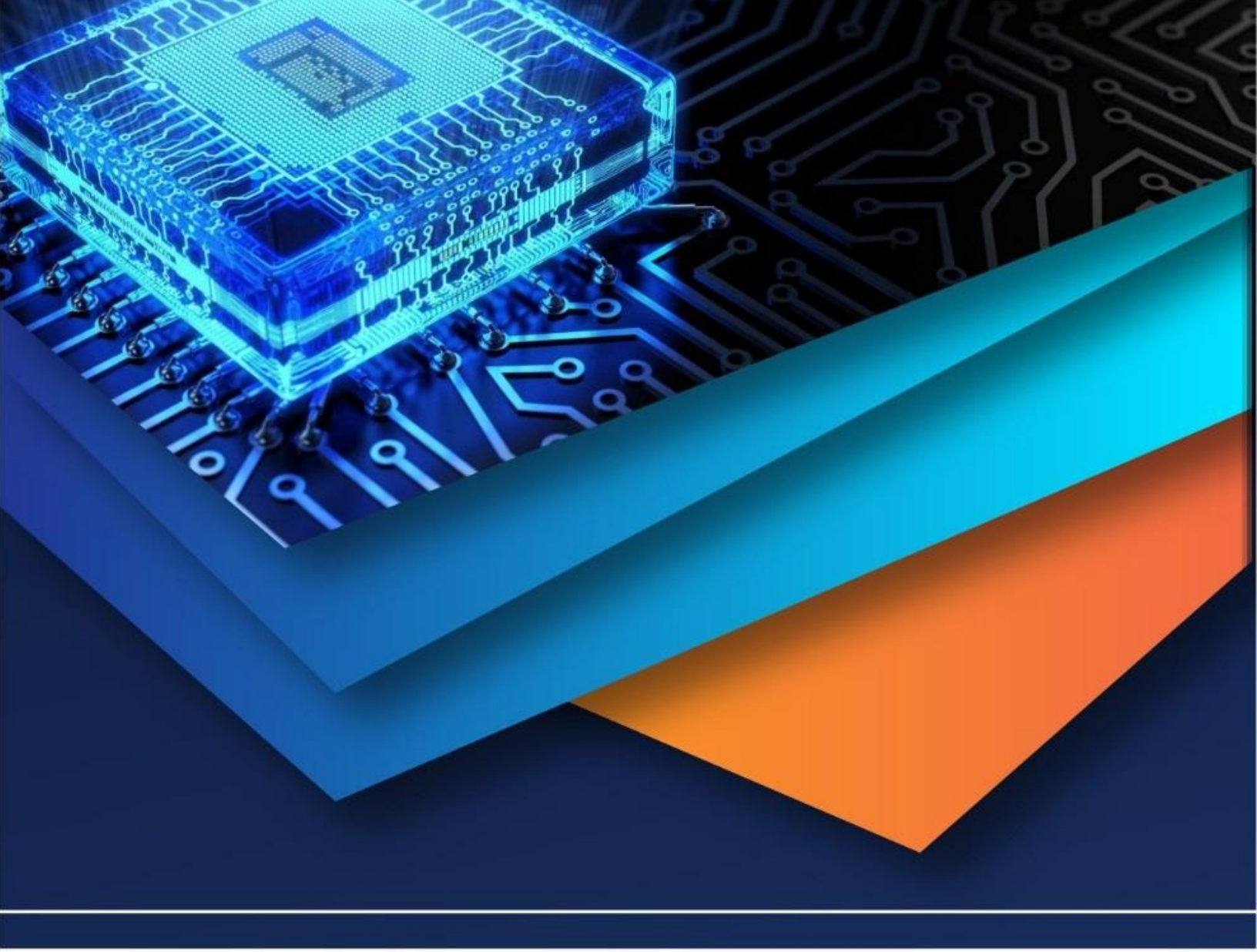

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