

Study of Urban Cities Traffic Problems Due to Delay and Overcrowding

Dr Awari Mahesh Babu

Professor, Civil Engineering Department, Tirumala Engineering College, Hyderabad TS India

Abstract: Road traffic delay and overcrowding have become recurrent problems worldwide. This is mainly since transportation growth is sluggish compared to increase in quantity of vehicles, owing to gap and expenditure restriction. Traffic being non-lane based and disordered, is mainly unusual with different types of vehicles. Metropolitan region roads are under mixed traffic conditions. The road user physiological behavior also causes delay and congestion. In this paper, the most important problems in the metropolitan region caused by traffic due delay and over crowding

Key words: Traffic, delay, overcrowding, road, vehicle, quantity

1. Introduction

Mostly, road transport is the main approach of transport which connects the villages, towns, cities, metropolitan regions, states and whole country in to the system establishing an innovative communiqué. It improves the entire nation development, environment conditions and socio economic culture developments. Additionally the special advantages of the highway transport individual have been facing unusual troubles owing to the need of its suitable organization, refurbish & preservation. With the unusual predicament of road transport, traffic delay and overcrowding are the rising troubles in the urban region. Various authentic problems and solutions of traffic delay and overcrowding have been discussed in this paper.

2. Traffic Delay and Overcrowding:

Traffic overcrowding is the existence of delays by the side of a substantial lane owing to the existence of additional road users. This is the most important problem of transportation in metropolitan region. Because of this, each cause is delaying: road user insincerity achieve to the intention, be short of services on the period public require, be short of services scheduled the routes public necessitate. Owing to the traffic overcrowding in the unusual intersections the liberated stream of the vehicles speed is low compare to the design speed. This will effect socioeconomic development of the country. Environmental pollution increases due to traffic delay and overcrowding. The imbalance of physiological behavior of the road user may leads to the risk generation further it may leads to accident.



Fig 1. Traffic delay and overcrowded under mixed traffic conditions

3. Study Relevant to Social and Cultural Changes

Cycling gradually became additional significant in Europe over the first half of the twentieth century, but it dropped off considerably in the United States between 1900 and 1910. Automobiles became the favorite

way of transportation. Over the 1920s, bicycles steadily became considered children's toys, and by 1940 most bicycles in the United States were made for children. From the early 20th century until after World War II, the roadster constituted most adult bicycles sold in the United Kingdom and in many parts of the British Empire. For many years after the arrival of the motorcycle and automobile, they remained a prime way of adult transport.

Prior to the form of the automobile, horses, walking and streetcars were the main modes of transportation inside cities. Horses need a huge quantity of concern, and were then set aside in public facilities that were regularly remote since residences. The prosperous could have enough money to keep horses for personal use, hence the term carriage deal referred to best benefaction. Horse manure left on the streets also produced a sanitation problem.

The automobile made standard medium-distance travel more suitable and reasonable, particularly in areas without railways. Because cars did not require rest, were faster than horse-drawn conveyances, and soon had a lower total cost of ownership, new people were habitually able to travel farther than in earlier times. The creation of highways half a century later sustained this revolution in mobility. Some experts suggest that many of these changes began during the earlier *Golden age of the bicycle*, from 1880–1915.

Changes to Urban Society

Urban interchange in Guangdong

Opening in the 1940s, most metropolitan environments in the United States lost their streetcars, cable cars, and other forms of light rail, to be replaced by diesel-burning motor coaches or buses. Several of these have never returned, however some metropolitan communities in due course installed subways. An additional alteration brought about by the car is that modern metropolitan pedestrians must be further alert than their ancestors. In the past, a pedestrian had to be anxious about relatively slow-moving streetcars or other obstacles of travel. With the propagation of the car, a pedestrian has to expect safety risks of automobiles traveling at high speeds because they can cause serious injuries to a human and can be fatal, unlike in earlier times when traffic deaths were usually due to horses evading control. According to various social scientists, the failure of pedestrian-scale villages has also disconnected communities. Several people in urbanized countries have less contact with their neighbors and rarely walk unless they place a high importance on exercise.

In America

George Monbiot writes that widespread car culture has shifted voter's first choice to the right of the political spectrum, and thinks that car culture has contributed to enlarge in individuality and less social relations between members of unusual socioeconomic classes. The American Motor League had promoted the making of more and better cars since the early days of the car, and the American Automobile Association joined the good roads movement begun during the prior bicycle craze; when manufacturers and petroleum fuel *suppliers* were well recognized, they also joined construction contractors in lobbying governments to build public roads. As tourism became motorized, persons, families and small groups were able to vacation in distant locations such as national parks. Roads including the Blue Ridge Parkway were built specially to help the urban masses experience usual view previously seen only by a few. Cheap restaurants and motels appeared on favorite routes and provided wages for locals who were disinclined to join the trend to rural depopulation.

Europe

Road building was sometimes also influenced by Keynesian-style political ideologies. In Europe, massive freeway building programs were initiated by a quantity of social democratic governments after World War II, in an effort to make jobs and create the car obtainable to the working classes. From the 1970s, promotion of the automobile gradually more became a trait of some conservatives. Margaret Thatcher mentioned a "great car economy" in the paper on Roads for Prosperity. Cinema: Automobile gain in the twentieth century, also an significant enlightening role in cinema, mainly through blockbusters. Important characters such as James Bond, or the ones performed by James Dean, were always provided on scene with powerful automobiles, which through time, have become cultural icons.

Culture of Metropolitan Cites in India

City Name: Bangalore

Garden city and IT capital. Bangalore was not initially premeditated to develop this big; hence infrastructure limitations are causing a major obstruction to cities growth potential.

Important things:

1. Multi Language, multi cultural support
2. Cheap Food
3. Immense weather

4. Most number of educational institutions
5. Relatively cleaner better and more frequent Metro Bus Service
6. Daily Bus Pass Rate is cheapest
7. Magazines and movies of all languages available
8. Highest amount of Software export conducts Bangalore IT, annual IT event and still retains IT Capital, Silicon Valley of India tag.
9. Considerable weekend spots and hangout places [Skanda Giri][Nandi Hills][Big Banyan Tree][Mysore][Wayanad][Talakona][Coorg] [Ramanagaram] [Antaragange, Kolar]
10. Volvo City buses
11. Good number of public gardens in almost all localities. (Though open for few specific hours in morning and evening, these are good places to inhale some fresh air and relax)
12. Maximum number of malls and multiplexes
13. Kamat Restaurants on all important highways on the outskirts of Bangalore.
14. Bangalore now is the only city in South to have Metro. Chennai has local trains and metro is under development.
15. Major industries: Toyota, Volvo, Infosys, Biocon, Wipro, ISRO, HAL, NAL, BHEL
16. Lots of self drive car and bike rental options

Constraints:

1. Over crowded roads and unbearable Traffic
 2. Land cost and house rent-too expensive
 3. House advance-10 months rent minimum
 4. Highest Petrol Cost
 5. No local trains (Both other cities have it) [update: metro is operational now, but covers a very short distance]
 6. Shortage of Hotel Rooms and high cost
 7. No stable government for past few years
 8. Cost of transport high and No concept of Share Autos
 9. Very strict traffic police, who accept bribe happily
 10. Several under construction flyovers
 11. Competition is very high for almost everything-space, jobs etc, compared to other cities
- Related: Skanda Giri Hills Bangalore* BMTC Volvo City buses Bangalore * My experience finding a self drive car rental in Bangalore * Bangalore Classic Scooters * Nice road- will it remain nice * Places in BLR that can be explored early morning/late evening *

City Name: Chennai

A distinctive south Indian city, kept itself away from influences of north India. Politically constant and a little economic compared to other cities. More temples and religious places than other two cities, but not many places of tourist interest as such

Important things:

1. Cheapest Petrol
2. Only city out of three with Beach and Sea
3. Share Autos available
4. Cheapest Bus fares
5. Local Trains available
6. Accessible transportation via Sea, Air and Rail
7. Preferred of late by major manufacturing Companies (Dell, Motorola, Nokia, BMW, Hyundai, Nissan, Ford etc) for their production units. (More employment opportunities)
8. Stable government and less red tape
9. New Volvo City buses
10. Presence of US Consulate (and many more consulates)
11. Very good number of trekking spots and mountain ranges within 100-200 kms range. [Yelagiri * Talakona * Tada Hills * Parvathamalai, Nagari, Nagalapuram]

Constraints:

1. Language barrier for North Indians. No Hindi speaking people and signboards
2. City Buses are extremely aged, overcrowded and unclean (Some new buses, including Volvo are introduced recently, but most of the scrap buses still rule the road)
3. Hotel Stay bit expensive dues to 25% luxury tax

4. Hot atmosphere and humidity
5. Meals cost relatively high
6. Least number of weekend spots/picnic places
7. Not enough gardens...Beach is the best and only place for walk...
8. Both Hyderabad and Bangalore have two airports now; while chennai has only one...Not a major shortfall but having second airport helps...
9. Toll roads right inside city-additional expense if commuting on OMR...

City Name: Hyderabad

The city appears to be physically powerful enough to absorb the impact of IT boom and expand itself rapidly. Miscellaneous culture and people of unusual culture from different places settled happily. Living here will not be a problem. Famous for Biryanies and hasn't changed much in past one year.

Important things:

1. Widest Roads and minimum traffic jams (except a few regular traffic jam spots)
City with lots of rocks- Maximum driving pleasure for adventure seeking persons as the roads include lots of ups and downs and turns giving a sporty feeling
2. Liberal traffic police-You can see vehicles of all states (Registered in states other than AP) driving comfortably in Hyderabad.
3. Metro Trains
4. Magazines and movies of all languages available
5. Share auto facility available
6. Maximum number of tourist destinations/picnic spots around the city
7. Hyderabad has been just categorized as A-1 city
8. Legendary Biryani...
9. JN outer ring road (95% completed)
10. Prestigious metro rail project is under construction for important major corridors
11. Weather is good

Constraints:

1. Food is too spicy, not liked by many
2. Land prices soaring due to IT boom.
3. Urdu influenced Hindi accent
4. Max number of bomb blasts (compared to other 2 cities)
5. More number of three and two wheelers vehicle users
6. Rash (rough) driving by two wheelers users
7. No proper drainage system in rainy season.

4. Important Major Problems of Urbanization in India

Although India is one of the less developed countries of the world with only 27.78 per cent of her population living in metropolitan cities, this country is facing a serious crisis of metropolitan growth at the present time. Whereas urbanization has been an implement of economic, social and political progress, it has led to serious socio-economic problems. Metropolitan sprawl is rapidly encroaching the valuable agricultural land. By 2030, more than 50 per cent of India's population is expected to live in city areas. Following problems need to be highlighted.

Metropolitan Sprawl:

Metropolitan sprawl or real expansion of the cities, together in population and geographical area, of rapidly growing cities is the origin reason of metropolitan problems. In most cities the economic base is incapable of dealing with the problems created by their excessive size. Huge immigration from rural areas as well as from small towns into big cities has taken place almost constantly; thereby adding to the size of cities. The first large flow of migration from rural to urban areas was during the "depression" of late 1930s when people migrated in search of jobs. Later, during the decade 1941-51, another a million persons motivated to urban places in response to wartime industrialization and partition of the country in 1947.

During 1991-2001, well over 20 million people migrated to cities. The maximum pressure of the immigrating population has been felt in the central districts of the city (the old city) where the immigrants congregate to their relatives and friends before they search for housing. Population densities beyond the "old city" decline sharply. This is due to the fact that such large cities act as magnets and attract large number of immigrants by impression of their employment opportunities and modern way of life. Such hyper urbanization

leads to projected cities sizes of which challenge imagination. Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad etc. are examples of urban sprawl due to large scale migration of people from the surrounding areas. In several big cities affluent people are continuously moving from the crowded centers of the cities to the more pleasurable periphery where they can build larger houses and get pleasure from the space and isolation of a garden around the house. In some cities, the outskirts are also added to by squatters who build temporary shacks of unused land although they have no legal right to the land. The complexity of restricting city expansion in either case is immense and most towns and cities are surrounded by wide rings of suburbs. Historically suburbs have developed first along the major roads leading into the town. This type of growth is known as ribbon settlement. Such sites are first to be developed because of their position near the road gives them greater convenience. But soon the demand for suburban homes causes the land between ribbon settlements to be built and made accessible by constructing new roads.

Overcrowding:

Overcrowding is a situation in which too many people survive in too diminutive space. Overcrowding is a consistent consequence of over-population in urban areas. It is naturally expected that cities having a large size of population squeezed in a small space must suffer from overcrowding. This is well exhibited by almost all the large cities of India.



For example, Mumbai has one-sixth of an acre open space per thousand populations though four acre is suggested standard by the Master Plan of Greater Mumbai. Metropolitan cities of India are overcrowded both in 'absolute' and 'relative' terms. Unconditional in the sense that these cities have a genuine high density of population; relative in the sense that even if the densities are not very high the problem of providing services and other facilities to the city dwellers makes it so. Population density in central part of Delhi could be much higher. This leads to remarkable pressure on infrastructural facilities like housing, electricity, water, transport, employment, etc. Efforts to decongest Delhi by developing ring towns have not met with the necessary success.

Housing:

Overcrowding leads to a constant problem of lack of houses in urban areas. This problem is specifically more acute in those urban areas where there is large invasion of unemployed or underemployed immigrants who have no place to live in when they enter cities/towns from the neighboring areas. Moreover, the current rate of housing construction is very slow which makes the problem further complicated. Indian cities require annually about 2.5 million new dwellings but less than 15 per cent of the requirement is being constructed. Several factors are accountable for the above mentioned sad state of relationships with respect to housing problems faced by the metropolitan people. The major factors are shortage of building materials and financial resources, insufficient development of public utilities into sub-urban areas, scarcity and unemployment of urban immigrants, strong caste and family ties and lack of sufficient transportation to sub-urban areas where most of the vacant land for new construction is situated.

Unemployment:

Urban unemployment in India is estimated at 15 to 25 per cent of the labor force. This percentage is even higher among the sophisticated people. It is anticipated that about half of all educated urban unemployed are concentrated in five metropolitan cities (Delhi, Mumbai, Kolkata, Chennai, Hyderabad). One of the major causes of urban unemployment is the large scale migration of people from rural to metropolitan areas. Rural-urban migration has been continuing for a pretty long time but it has not always been as great a problem as it is

today. The general poverty among the rural people pushes them out to urban areas to migrate in investigate of livelihood and in the hope of a improved living.

Slums and Squatter Settlements:

The natural sequel of unrestrained, unplanned and haphazard growth of metropolitan areas is the development and spread of slums and squatter settlements which present a striking feature in the ecological structure of Indian cities, particularly of metropolitan centers. The rapid urbanization in conjunction with industrialization has resulted in the increase of slums. The increase of slums occurs due to various factors, such as, the lack of urbanized land for housing, the high prices of land beyond the reach of urban poor, a large influx of rural migrants to the cities in search of jobs etc. In spite of a number of efforts by the Central and State Governments to contain the number of slum dwellers, their expansion has been increasing sharply exerting tremendous pressure on the existing civic amenities and social infrastructure. No clear-cut distinction can be drawn between slums and squatter settlements in follow except that slums are relatively steadier and are located in older, inner parts of cities compared to squatter settlements which are comparatively impermanent and are often scattered in all parts of the city, particularly outer zones where urban areas merge with their rural hinterland. Normally, squatter settlements contain makeshift dwellings constructed without official permission (i.e., on unauthorized land). Such settlements are constructed by using any available material such as cardboard, tin, straw mats or sacks. Squatter settlements are constructed in an uncontrolled manner and badly lack essential public services such as water, light, sewage. Such an environment leads to several health problems. Determining size of squatter settlement is a difficult job. Some may occur singly or in small groups of 10-20 dwellings while others take place in huge agglomerations of thousands of houses. They can occur through planned rapid (almost overnight) invasions of an area by large number of people or by gradual accretion, family by family.

Transport:

With traffic restricted access and traffic congestion, almost all cities and towns of India are suffering from delicate form of transport problem. Transport problems enhance and become more complex as the town grows in size. With its expansion, the town performs different and complex functions and more people travel to work or shop. As the town becomes larger, even people living within the built-up area have to travel by car or bus to cross the town and outsiders obviously bring their cars or travel by public transport. Wherever, trade is important, commercial vehicles such as vans and trucks will make difficulty of traffic more complicated. Since most of the commercial activities of the towns are concentrated in the Central Business District (C.B.D.), the centers are areas of greatest congestion. But, other parts of the town are not liberated from traffic congestion. Such areas include the roads leading to factories, offices, schools, etc., which will be thronged with people in morning and evening; minor shopping centres which grow up in the suburbs; sporting arenas, entertainment districts which will be busy at night, roads leading to residential and dormitory towns which will be busy when commuters congregate to the cities in the morning to work and return home in the evenings. Such congestion becomes greater when the centre is built up in tall skyscraper blocks whose offices sometimes employ thousands of workers, because at the end of the office hours everyone leaves the building within a short space of time to make their way home.

This puts remarkable pressure on public transport and causes journeys to take much longer period than they normally would. In most cities the rush hour or peak traffic hour lasts for about two hours and during that period buses and trains are crammed to capacity, roads are overcrowded with vehicles and the movement of traffic becomes very slow. In other towns, the narrowness of the streets, which were built long before the motorized transport and lack of parking facilities are the main reason of congestion. Cars may be parked along the edges of the roads restricting movement to a narrow lane and the multiplicity of narrow streets, sharp corners and waits to turn into lanes of traffic may slow down the movement and thus create even greater congestion. Apart from that, the level of incomes and affordability of Indian masses is very low and the citizens are not able to pay an economic fare for use of public transport system. Therefore, all city bus services sustain such heavy losses that they cannot really expand or even maintain a fleet adequately to meet the city needs. Moreover, mixture of vehicles causes unmanageable chaos on the roads. Free movement of stray cattle and domestic animals on the roads adds to traffic problem and often cause accidents. Heavy traffic and congestion leads to slow movement of traffic, fuel wastage environmental pollution and loss of precious time.

Problem of metropolitan Pollution and traffic:

With rapid pace of urbanization, industries and transport systems grow rather out of proportion. These developments are primarily accountable for pollution of environment, particularly the urban environment. We cannot think of strong India, economically, socially and culturally, when our cities remain squalor, quality of

urban life declines and the urban environment is damaged beyond repair. As a matter of fact, cities comprise the backbone of economic expansion and urbanization is being seen in a positive light as an engine of economic growth and agent of socio-political transformation.

All traffic delay and overcrowding is caused by hedonism order. When the capacity road exceeds, a wait in line will appearance. The wait in line is relatively perceptive to the quantity of intemperance order. Pro illustration, if it has needed off on a four-lane throughway is 7,300 vehicles / hr and the ability in a jam is also 7,300 vehicles/hr, we anticipate - redundant delay of vehicles within the intersections.→ Busy streets and amplified effluence caused by individual vehicle. Every Vehicle stop extended time in traffic since the quantity of vehicles on that region, consequently raising the quantity of moment spends scheduled the street. Irregular parking and mixed traffic conditions will lead to delay and overcrowding. Mixed traffic conditions in metropolitan region are very complex and they leads to delay and overcrowding. Slow moving vehicles like cycles, cycle rickshaws, Autos, bullock carts, heavy transport vehicles will also cause delay and overcrowding of traffic in metropolitan region. Apart from these political processions, dharnas, strikes, religion processions will effect traffic movement. Religion small temples, mosques, churches some of them are recently created by neighbor land owners (because land value will be more as compared to government compensation) and politician statues leads to delay and overcrowding in metropolitan region.



Obstructions to traffic on metropolitan region

5. Recommendations and Claims

Obviously India, one of the most crowded nations in the globe, furthermore a prompt increasing economy, is considering horrible traffic delay and overcrowding troubles in its metropolitan region. A scientific

approach is required to study traffic delay and overcrowding contributors/parameters. Application of mathematical models to traffic parameters should be implemented as there is constraint for road criterions and limited funds. Some of the following recommendations have been studied for improving traffic movement and to reduce delay and overcrowding in metropolitan region.

1. Separate traffic lanes should be identified for similar type of vehicles i.e, two wheels vehicles, and three wheels vehicles, Bus tracks etc.,
2. Proper parking places should be identified. Users must park their vehicles at provided regions/bays.
3. Well planning shopping malls / commercial building should be permitted in metropolitan region with proper parking area and other facilities.
4. Develop the road pavement and carriage way width to accommodate increased traffic vehicles.
5. Planning of series signal system and signal timings should be allocated as number of vehicles in queue on that lane.
6. Execution of Intelligent Transportation System similar to confrontation organization, Corridor administration, sophisticated means of transportation arrangement, sophisticated traffic organize, genuine instance trip corresponding, incorporated passage & reasonable arrangement.
7. Development of the street/gulley/local roads, use for two wheelers with speed breakers.
8. Superior walkway illumination, planned bus stops.
9. Appropriate administration of lighting organization on urban roads.
10. Strictly implement of traffic laws & policy.
11. Encouraging sharing vehicles/minibuses/cars /passenger vans
12. Flyovers/sky flyovers/Metro rails/Elevated express ways should be constructed. A good example for elevated express way is PV Narshimha rao which is situated in Hyderabad Telangana state India. It is connected from Mohidhipatanam to Shamshabad airport junction. This way is meant for only cars and all traffic problems have been.
13. Use side area (occupy the adjacent land owners) for the roads adjacent to religion small temples, mosques, churches. Don't allow any new temples, mosques, churches and any type of statues on roads as order given by Honorable Supreme Court of India an interim order on September 29, 2009. "Public road is not anyone's property. Each citizen had a right to use the road and that right cannot be interfered with or impeded by constructing a temple, mosque, church or gurudwara or by installing the statue of a public figure," said Justices Lodha and Mukhopadhaya.

6. Conclusions

If everyone believe regarding this difficulty and know how to comprehend and authentic problem and turn into vigilant concerning it, the difficulty will be tends to reduce. Implementation traffic laws & rules and are individual task of the sophisticated road users. Implement 3-Es (EEE) i.e Engineering, Enforcement and Education strictly in metropolitan regions. Road users should follow queue in lane. Zigzag driving should be avoided. If they will move in proper way there will be less delay and overcrowding in metropolitan region. Alternative routes should be proposed for two wheelers as they are driving their vehicles in zigzag manner with different speeds on the major roads on metropolitan region. Implementations of the above recommendations are very important and the concern authority/engineer should plan according restricted constraints.

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