

TOWARDS MITIGATING CONGESTION ON ROADS

Rising traffic congestion is an inescapable condition in all large and growing metropolitan areas across the world. Peak-hour traffic congestion is a result of the way modern societies operate and of residents' habits that cause them to overload roads and transit systems every day. Indeed, it is almost certain to get worse, mainly because of rising population and prosperity.

One of the main causes of congestion on the roads is increase in the ownership of cars. Because of rapid economic growth around the globe, increasingly more residents can afford private and even big size luxurious vehicles. This has lead to an increase in the traffic on roads Another contributing factor is the lack of an efficient public transport infrastructure. The public transit system, although existent in every major city, but poor maintenance, lack of comfort and sometimes total absence of buses, trains etc. forces the residents to rely on cars or taxis. The road system is another cause of congestion. Although the roads, nowadays, are highly developed, planners have not been able to keep up with the rapid expansion of the population. Some parts of the most populous cities across the globe are centuries old and there is no way that the then city planners could have envisaged the modern day's growth of traffic. At times, construction, repair and rehabilitation activities on roads cause congestion and delays.

Congestion can be characterized in a number of ways like level of service, speed, travel time and delays. Congestion studies show that about half of traffic delays are non-recurring which

are attributable to temporary disruptions such as traffic incidents, construction zones, poor weather and special events etc. The other half is recurring congestion i.e delays which occur at the same place and at the same time day after day.

Traffic congestion has a number of negative effects:

- Unwanted delays and wasting time of motorists and passengers. As a non-productive activity for most people, congestion tends to reduce regional economic health.
- Inability to forecast travel time accurately, leads to commuters allocating more time to travel "just in case" and less time on productive activities.
- Wasted fuel increases air pollution and carbon dioxide emissions, owing to increased idling, acceleration and frequent braking.
- Wear and tear of vehicles, as a result of idling in traffic and frequent acceleration and braking, leading to more frequent repairs and replacements.
- Stressed and frustrated motorists, lead to increase in incidents of road rage and reduced health of motorists
- Spillover effect from congested main roads to secondary roads and side streets, because alternate routes are attempted.
- Undue pressure on side roads and internal colony roads
- Damages to road surface due to stopping and

accelerating and spilled oil and lubricants.

Literature survey has indicated that the US Department of Transport and Environment emphasizes the need for integration between transport planning and land use planning. It has mandated that in preparing development plans, local authorities should co-ordinate their policies for transport and other forms of development. To meet these aims, local authorities should adopt planning and land-use policies to promote development within urban areas, at locations highly accessible by means other than the private car, strengthen existing local centres in both urban and rural areas, which will offer a range of everyday commodities including shopping and employment opportunities and also aim to limit parking provisions to discourage reliance on the car for work and other journeys where there are effective alternatives.

Transport planners have been trying to reduce the impact of the private car in urban areas for many years as a result of concern about air quality and the economic consequences of congestion. Despite efforts, urban traffic congestion still prevails and is probably growing in most cities. There is considerable consensus about what an urban transport policy should involve. It should consist of an improved and expanded public transport system, and should involve the control of land-use changes and new development in such a way as to reduce journey and car use, wherever possible. However, these alone are unlikely to be enough and there need to be positive efforts to contain or reduce the total volume of traffic. It should include better provisions for pedestrians and cyclists and means of improving existing public transport, through bus lanes as well as encouraging its use through 'park and ride' facilities and other forms of efficient mass rapid transport systems.

If public transport is to be viewed as an alternative to the car, it will need to be improved. Cars are

preferred because they can provide a quicker journey door to door, they may be needed at work as the return journey time is often unknown and they also provide safety. Public transport can furnish an alternative in many cases, if it is properly organized and maintained. It must operate when passengers want to use it and it needs to be comfortable, reliable, safe and accessible. Time is also a factor which may be difficult to deal with: although the actual in vehicle time can be competitive with the car. It is the getting to the bus or train and the waiting time that make the car more attractive.

In some developed countries, the problem of congestion is being tackled by use of congestion pricing. This means charging an amount for use of a road which may vary with the times in a day, so that traffic is kept moving. As rush hour approaches, the price increases, in stages, in order to keep total cars using the facility at the same optimal flow level. The money raised could be used to develop better public transit infrastructure, to be used as an alternative. Congestion pricing also increases road carrying capacity.

The conclusions reached by many of the transport academics and practitioners around the world are that combinations of public transport/cycling/traffic management measures are not enough to reduce traffic on roads and that restraint measures, such as parking controls increasing the capacity of the road system or reducing the demand for use of the system or road pricing are needed as well. It is also argued and rightly so, that to achieve public/political acceptability for such policies, improved public transport, providing alternative means of travel need to be in place before the restraints are introduced.

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