

Principles for a Policy for the
Amelioration of Traffic woes in Indian Cities

Group A:

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1. Introduction:

Traffic jams and roads clogged with parked vehicles are common experiences in all cities in India and more so in the Metropolitan cities where these problems are very intense. No doubt, the growth in number of vehicles contributes to employment and the economy. However, the rapid growth in motor vehicle is causing a lot of commuting problems as well as adverse impacts on health and environment. There is a severe shortage of parking spaces. One concomitant of this trend is the severely reduced accessibility of roads for pedestrians and cyclists.

The causes for the rapid rise in the numbers of vehicle are multi-dimensional and very complex in nature and multifarious problems caused by the increase in vehicular traffic. This policy paper tries to address only a few of these problems by focusing on reduction of the number of vehicles on the road and improvement of the quality of these vehicles to reduce environmental pollution.

2. Outline of the Policy Problem:

There is an enormous growth taking place, year after year, in the number vehicles plying in the cities. This is resulting in heavy congestions on the roads, serious problems in commuting, severe pollution -air as well as sound-, accentuated health issues like asthma, respiratory tract infections etc and parking woes. For instance, in Mumbai the total number of registered vehicles in 1980-81, 2000-01, 2011-12 and 2016-17 were (in lakhs) 3.2 L, 10.29 L, 20.28 L and 30.69 L, respectively (source: report of the Mumbai Environmental Social Network). Delhi government puts the total number of registered vehicles at 1,05,67,712 (May 25, 2017) out of which 31,72,842 are cars and the biggest chunk of the registered vehicles - 66,48,730 are motor cycles and scooters which are the major air polluters due to their poor emission standards. [ToI, 4 June 2017].

Hyderabad city with 1.20 crore population has 28.28 lakh vehicles- a stunning growth of 75 per cent in the last 7 years. 20.26 lakh two-wheelers dominate its roads. If Greater Hyderabad region is considered, the figure shoots up to 45 lakh vehicles. [Telangana Today, 19, June 2018]. Similar is the case with almost all cities in India. As long as the migration of rural people towards cities continues unabated, the problem will get bigger and bigger.

As the population pressure is increasing in the cities, the land prices are spiralling up making it extremely difficult for civic authorities to acquire land for vehicle parking. A car requires a parking space of 12 sq mt area which is equivalent to a tenement in a slum rehabilitation colony. Though Municipal Corporations in some cities have made it mandatory for the housing societies to compulsorily provide for parking spaces, this measure addresses only a small part of the problem. There is a widely prevalent practice of unauthorised street parking for which there are generally no regulations and even where regulations exist there is rampant corruption to make the regulations ineffective. These vehicles parked on the roads reduce the space for vehicular traffic.

On account of weak and uncomfortable public transport system, the people have to depend on private transport. This is one of the important reasons for rapid increase in the number of private vehicles. Reduction in number of private vehicles can happen only if there is a dependable and good quality public transport.

Mumbai, Kolkata, Chennai, and Delhi have suburban rail systems, but some trains are dangerously overcrowded. In Mumbai, for example, peak-hour trains are filled to more than twice their maximum design capacity, with so-called 'super dense crush loads' of 14–16 passengers/m² of floor space (Varshneya et al., 2002; Indian Railways, 2003) That forces some passengers to hang out of doors or windows, or ride between cars (Acharya, 2000). Similarly, many buses are overcrowded, sometimes forcing passengers to sit on roofs or hang perilously from the sides. The slow bus speeds in very congested traffic further diminish service quality, and divert passengers to other modes, especially motorcycles, which can manoeuvre more easily between vehicles. [2]

Various types of paratransit services like taxis, autorickshaws, minivans etc complement the regular public transport services in all the cities. In most of the cities, the paratransit services serve as the most important mode where the routes are not served by regular bus services. While these paratransit services provide essential transport, they also cause some important problems on account of safety and bad condition of the vehicles. However, paratransit services provide flexible, convenient, and affordable transport. [2]

Walking and cycling do not receive any funding, infrastructure provision, legal rights, or traffic priority they deserve. [2] Pavements are either non-existent or so cluttered with other uses that pedestrians are usually forced to walk in the roadway. Separate cycle lanes and paths are not available for cyclists in any Indian city, except the planned city of Chandigarh (Chhabra, 2002). Therefore, pedestrians and cyclists are forced to share the roads with motorized and non-motorized transport. Pedestrians and cyclists account for almost three-quarters of India's traffic fatalities.

Because of the weak and uncomfortable Public Transport System (PTS) the people must perforce depend on private transport. This is one of the important reasons for rapid increase in the number of private vehicles. Reduction in number of private vehicles can happen only if there is a dependable and good quality public transport. There is a widely prevalent practice of unauthorised street parking for which there are generally no regulations and even where regulations exist there is rampant corruption to make the regulations ineffective.

The following developments that occurred during the last 30 years, have helped initiate and accelerate efforts to deal with the rapidly emerging problems of urban transport in India: [4]

- Recognition, in 1986, of urban transport as a separate subject in the allocation of responsibilities within the Central Government and its assignment to the Ministry of Urban Development.
- The decision, in 1996 to build a metro rail system in Delhi as a partnership between the national government and the concerned state government.

- The third was the launching of the National Urban Renewal Mission, in 2005.
- The fourth was the adoption of a National Urban Transport Policy, in 2006, which primarily emphasised investments in public transport and non-motorized modes as against road widening and construction of flyovers.
- Starting of metro rail projects in tier two cities like Hyderabad, Lucknow, Kochi, Nagpur etc with the assistance of the Government of India
- Construction of many bypass roads to prevent through traffic from entering the cities. The 159 Km Outer Ring Road in Hyderabad and the 14 lane Eastern Expressway inaugurated in May 2018, expected to divert nearly 1.5 lakhs trucks traversing North-South every day from entering New Delhi area are classic examples. Increased awareness about pollution and environment have prompted citizens to get actively involved in reducing traffic related issues by promoting culture of car-pooling, using of eco-friendly vehicles etc.
- Drastic policy initiatives like only Odd-even numbered vehicles on odd even days introduced in New Delhi in 2016 and announcement of the central government to completely change over to electric vehicles by 2030 etc.

In recent times, India is investing in a large scale on new public transport systems such as the metro system in Delhi, Mumbai, other Major cities like Lucknow, Kochi, Bangalore, Nagpur etc. Many other Indian cities have been evaluating alternative public transport improvements. Ahmadabad city had developed and running the BRT system very successfully. A noteworthy improvement has been made to existing suburban rail systems in Mumbai, Chennai and Hyderabad. New vehicles like the low floor busses with large carrying capacities were introduced and 10,000 Electric Busses at a cost of Rs 1.5 Crores each have been planned. However, there has not been enough investment made in Mass transport vehicles and infrastructure because no level of government has required funds available. [2]

One of the most important weaknesses of in the governance of urban transport is the involvement of a multitude of agencies in any city.

Often these agencies report to different levels of government. There by the planning processes are fragmented. Although cities have been required to prepare Comprehensive Mobility Plans (CMPs) they have been prepared without integrating the components and also the land use and transport plans. Barring the exceptions of Indore and Bhopal, the industry structure for public transport has not moved in line with global trend. [4]

The development of a good public transport requires a strong budgetary support as well as strict policies related to street parking in residential as well as the business districts. Moreover, execution of brown field projects entails a lot of resistance from the public during the execution period on account of the inconvenience as well as due to issues related to resettlement. One important factor for the success of any public transport system is the last mile connectivity. It therefore, requires an integration with car aggregators and an integrated ticketing model which will make the travel and shifting seamless.

3. Objectives of this Policy:

- To reduce traffic congestions
- To reduce the commuting time
- To encourage use of Public Transport systems or services of cab aggregators
- To reduce pollution by reducing the number of vehicles on the road and improving the quality of vehicle, fuel used etc
- To reduce the number of vehicles parked on road
- To enhance the quality of experience for pedestrian and non-motorised vehicles
- To leverage the urban zoning policies to identify and minimise areas causing congestion
- To ensure Sustainable mobility and accessibility to all citizens to jobs, education, social services and recreation at affordable cost and within reasonable time. [3]

4. Policy alternatives and considerations:

An integrated approach that encompasses and integrates multiple modes, and sensitive to the needs of pedestrians and non-motorised vehicles needs to be formulated. While preparing this approach due

weightage needs to be given to the capabilities and constraints in the Indian context. (JOHN PUCHER***, 2007)

There is an advocacy for a slowdown of the massive roadway investment and a shift in emphasis to expanding and improving public transport, cycling, and walking facilities. A policy for addressing these issues should restrict motor vehicle use in congested city centres and increase taxes, fees, and charges. (JOHN PUCHER***, 2007).

The policy in this regard would require a multi-pronged approach as follows:

- i. First of all, a detailed plan incorporating various components of the public transport, namely, mass rapid transport, transit, last mile connectivity through aggregation of private operators and integration of various modes need to be prepared.
- ii. For this detailed stake holder consultations would be held. They will include experts in the field of traffic management, urban planning experts, police, public representatives, representatives from business and commerce sectors, Resident welfare associations, Railways, transport departments, environmentalists, public health experts and transport technology solution providers etc
- iii. The two main components of mass rapid transport will be the Bus Rapid Transport (BRT) and Metro Rail.
- iv. The feeder lines can be the public transport or through technology-enabled car aggregators which can also serve as last mile connectors. Last mile connectivity can be achieved through non-motorised vehicles like cycles.
- v. A system for integrated ticketing of all the above-mentioned modes needs to be developed.
- vi. All the arterial roads and the main roads need to be provided with good quality cycle tracks and pedestrian paths.
- vii. Enhancing the parking fees in busy commercial locations, Central Business Districts and prime areas based on the economic cost
- viii. Enhancement of taxes for those people purchasing more than one vehicle
- ix. The concept of Certificate of Entitlement (COE) (a certificate required to be obtained before a car sale is concluded in Singapore)

can be tried out as it is used effectively by Singapore government to restrict the number of cars on its roads.

- x. Stilt parking would be made mandatory in all new buildings to avoid spill over of parked vehicles on to the roads.
- xi. Incorporation of the following aspects in last mile connectivity: Footpaths for walk and cycle lanes within about 500 m of stations/stops; Road access for vehicles within about 3 km of stations/stops; Feeder service within about 5 km of stations/stops; Drop off & pick up facilities at stations/stops; Park and ride facilities at stations/stops; Land use control around stations/stops to avoid congestion at entry/exit. [3]
- xii. Through policy intervention phase out all old polluting vehicles and encourage through tax incentives to use more fuel efficient, less polluting vehicles.
- xiii. Encourage development of Electric Vehicles which has little carbon emission and popularize its use through tax incentives.
- xiv. Evolve better urban zoning strategies integrated with mass transport systems so that movement of public is reduced which in turn would result in reduction of vehicles. Shifting of business activities away from areas of congestion and creating new business districts as was done in CBD Belapur , BKC in Mumbai etc
- xv. Another approach could be creating a different work culture like work from home, flexi time etc...

5. Policy Environment:

- i. The policy will accord utmost priority for public transport. BRT systems being cost-effective and quick way to provide high-speed service the BRT and other forms of express bus services should have priority over new rail systems except where expected travel volumes are very high, or roadway space cannot be made available. Metro rail system shall be taken up only where expected passenger volumes are very high. Importance will be given to integration of BRT and regular bus systems.
- ii. Equity and Political acceptance: The policy places importance on PTS which benefits a large proportion of the population and therefore the political process can be expected to be in favour of this policy. Political consensus and user acceptance would be of prime importance

and hence their views and suggestions would be given due importance.

- iii. More and better designed facilities for pedestrians and cyclists would bring an inclusive approach.
- iv. The Policy requires an integration of various implementing agencies and an integration of various modes of transport in a seamless manner. This will be one of the biggest hurdles in the implementation process.
- v. The political leaders are generally in favour of big ticket infrastructure projects whereas the prudent choice will be a BRT combined with other policy components. There may be little enthusiasm in implementing policy measures which do not get them limelight.
- vi. Political leaders and Real estate developers would be taken on board for the urban zone planning policy to either decentralize high foot fall areas to city peripherals or centralize business areas with access restricted to Public Transport Systems only.

6. Outcomes:

The outcome indicators will be as follows:

- i. Frequency and duration of traffic congestions
- ii. Changes in the commuting time
- iii. Trends in the number of registrations of private vehicles
- iv. Improvement in the commuting experience for pedestrians and cyclists
- v. Reduction in corrupt practices related to illegal parking and traffic rules violations
- vi. Pollution levels
- vii. Improvements in last mile connectivity
- viii. Reduction in Road accidents
- ix.

7. Trade-offs:

As the thrust will be on PTS, Pedestrian and NMT the allocation of resources for roads and promotion of motorised transport will dwindle. This may lead to some adverse impact on the growth of automobile sector and the employment there of. However, if properly planned, these issues can be tackled over a period.

8. Policy Design:

Based on the above-mentioned strategies a detailed Policy to reduce the number of vehicles in the city would be prepared which will cover the following:

Detailed costing of the accepted solution:

Financing of the Projects:

Legal Frame work:

Mode of implementation: Government, PPP or private

Organisational/Institutional setup or Administrative Structure:

Capacity building:

Implementation Plan:

Timelines for completion of the projects with intermediate milestones clearly specified:

Monitoring and Evaluation:

The policy thus developed would be helpful in ameliorating the problems caused by large number of vehicles and reduce traffic woes in Indian cities.

References:

1. MADHAV G B. Urban Transport Policy as if People and the Environment Mattered: Pedestrian Accessibility the First Step. *Economic and Political Weekly* [serial online]. 2009;(33):43. Available from: JSTOR Journals, Ipswich, MA. Accessed June 17, 2018.
2. JOHN PUCHER***, Z.-R. P. (2007). Urban Transport Trends and Policies in China and India: Impacts of Rapid Economic Growth. *Transport Reviews, Vol. 27, No. 4, 379–410, July 2007, Vol. 27, No. 4, 379–410, .*
3. National Urban Transport Policy, 2014, Ministry of Urban Development, Government of India.
4. Review of Urban Transport in India, 2015, Institute of Urban Transport (India), Centre for Science, Technology and Policy