

CONTESTING CONGESTION

When it comes to urban transportation, one of the most difficult conundrums for experts and people alike is congestion. No one is alien to the fact that traffic congestion is consistently increasing in India, impacting both quality of life and economy. The chaotic melée on India's roads have become the defining characteristic of urban life. However, we are yet to take constructive steps to offset the impacts of this new urban epidemic and understand this phenomenon in its entirety.

Congestion is defined on the basis of different threshold values like traffic speed and road capacity. It can be broadly defined as excess demand for travel over its supply; when there are simply too many vehicles for the available road space. However, in its scope, congestion is as much a play of speed, time, distance, supply and demand as it is about urban and transportation planning, mobility policies and land use. Given the various urban registers it touches upon, congestion is both a problem and symptom.

The unbridled increase in the number of motor vehicles in India is arguably the most important contributing factor to congestion. Other causes of congestion are conventional and rooted in expanding cities like insufficient and inefficient public transportation, mixed use of dedicated roads, low-price parking policies, lack of connectivity between modes, lack of transport planning, among others. Additionally, a combination of city-specific factors lead to endemic gridlock like unique travel patterns, street network, city centres, density, roads as multi-purpose public goods, transport policies, etc. Since studies have shown that better uncongested mobility correlates with faster economic growth, it is important to formulate country-specific and city-level policies to reduce congestion. A deeper understanding of the interactions between urbanization, urban mobility and congestion is required to improve investments in transport and make growth scenario in Indian cities commensurate with the conditions for sustainable transport.

This Calendar is a small endeavour to understand congestion, its causes and possible solutions.

Calendar 2019

SUM Net India



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June- Sujit Patwardhan- Bangalore | **July-** ITDP- Pune | **August-** Martin Roemers- Mumbai
September- Pune | **October-** Swati Pathak- Pune | **November-** Swati Pathak- Hyderabad | **December-** Gaurav Singh- Kolkata

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Vehicle, Vehicle, Everywhere. Not a bus to take!

Efficient, affordable and accessible public transportation solutions can reduce the dependence on private transport and thereby congestion. As of now, commuters in India are largely dependent on private modes of transport for their work trips. The share of public transport is just 18.1% of work trips.

Increase in personalized means of transport and decline in share of public transport have significant implications on traffic congestion. Initially, it took 60 years (1951-2008) for India to cross the mark of 105 million registered vehicles. Thereafter, the same number was added in a mere six years (2009-15).



“Traffic congestion is caused by vehicles, not by people in themselves”
- Jane Jacobs

JANUARY 2019

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Congestion comes at a huge cost. So, cost congestion!

Congestion causes loss in productivity and valuable time. As per a study by Boston Consulting Group, congestion during peak hours in 4 major cities — Delhi, Mumbai, Bengaluru and Kolkata — costs Indian economy Rs 1.47 lakh crore annually, which is almost equal to the 2018 Rail Budget

Congestion pricing system is one way to mitigate congestion wherein a distance or area based road-user charging policy around congested city centres is adopted without increasing supply, and by regulating demand. This reduces emissions and encourages people to use public transport.



“Congestion charging has achieved exactly what it was designed to do — not cut the number of journeys, but shift them from private cars to public transport. It has cut congestion, and cut environmental damage, with the economy continuing to boom.” - Ken Livingstone

FEBRUARY 2019

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Congestion adds fuel to fire!

Traffic congestion, particularly during peak hours, not only increases delay but also pollution level. As per a Centre for Science & Environment study, quantity of all 3 major air pollutants (CO, hydrocarbons, nitrogen oxides) and particulate matter increases with reduction in motor vehicle speeds. Additionally, in a traffic jam, a vehicle consumes almost 20% more fuel.

Encouraging 'green' modes such as bicycles, cycle rickshaws, pedestrians will help in improving traffic flow and reducing emissions. Other way is market-based instruments, like motor vehicle tax, tax on diesel cars to promote cleaner technology and fuel. The tax, can be utilised for promoting greener fuels & modes.



“If we’re going to talk about transport, I would say that the great city is not the one that has highways, but one where a child on a tricycle or bicycle can go safely everywhere” - *Enrique Peñalosa*.

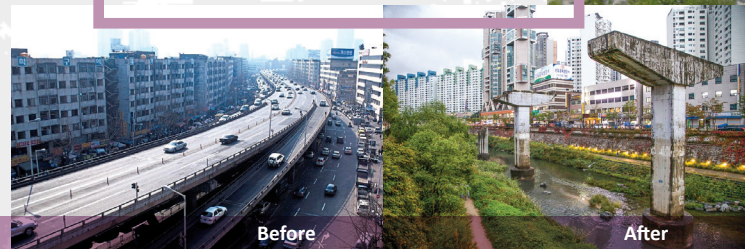
MARCH 2019

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When solution for congestion is a problem!

An effective but difficult strategy for solving the conundrum of induced demand is- Instead of adding road capacity, remove it. Few cities around the world, like Seoul, have shown that removing freeways and turning the surrounding blocks into an active social interaction space with improved pedestrian and bike infrastructure increase both social and economic activity.

Traditionally, flyovers and highways have been considered a solution to reduce traffic congestion. However, it has been proven that adding to the roadway capacity creates new demand for those lanes, maintaining a similar rate of congestion, if not worsening it. This phenomenon is called Induced Demand.



"Adding lanes to solve traffic congestion is like loosening your belt to solve obesity." - *Lewis Mumford*

APRIL 2019

[illegible]

A study by University of East Anglia and Centre for Diet and Activity Research showed that people who stopped driving and started walking or cycling to work benefited from improved wellbeing. Active commuters were better able to concentrate and were less under strain than if they travelled by car.

Congestion increases travel time and with that frustration and chronic stress. Drivers stuck in traffic tend to become impatient and are likely to drive aggressively and dangerously. According to National Crime Record Bureau (NCRB), the year 2014 witnessed 4.09 lakh cases of road rage and rash driving pan India.



City	Incidents	Victims
Kochi	13,431	13,431
T'puram	8,816	8,829
Chennai	8,527	8,527
Delhi	7,871	8,306
Kolkata	4,316	4,339
Bangalore	4,315	5,090
Mumbai	4,129	4,212

Source: NCRB 2014

Illustration: Arya Prahara

"A vigorous five-mile walk will do more good for an unhappy but otherwise healthy adult than all the medicine and psychology in the world." - Paul Dudley White

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DANGER SIGNAL (Illustration: Arya Praharaj)

Cases of injuries caused by rash driving/ road rage

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Let's not Park the question of congestion!

A parking policy could be formulated to guide planned parking facilities which must be in line with city's urban transit objectives and integrated with city's development plans. The policy should prioritize pedestrians, cyclists, buses and emergency vehicles over private vehicles for usage of on-street space. Demand management tools should be utilized and people using personal vehicles should be disincentivized.

Parking has a significant imprint on land use, as it consumes large amounts of space. Consequently, unauthorized and rampant parking goes against the equitable distribution of public spaces given that each vehicle requires at least three parking spots in the city.



"Our parking policies are dangerous nonsense, and they have harmed our cities immensely. Minimum parking requirements damage the city; harm the environment; increase the cost of housing; discriminate against poor people; and increase traffic congestion, air pollution, and now global warming." - Donald Shoup

JUNE 2019

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A dedicated solution for congestion!

A dedicated right-of-way for public transport is one of the most effective solutions to curb congestion and also serve the transportation needs of growing populous. Railway network, Trams, Bus Rapid Transit and Metro systems provide dedicated lanes allowing for more people to move quickly from origin to destination. Of these, Rail and BRT are highly cost-effective too.

The potential of public transit systems remain significantly underutilised when these are made to share the space with private vehicles, stuck in the same gridlock. In spite of carrying greater number of people and utilizing proportionally less space, expansion of public transport is often seen as increasing congestion rather than reducing it.



“Keeping in view that road space cannot be augmented, there is no option other than to put into place a good public transport system, with BRT being an integral part thereof; for only then would the citizen of Delhi shift to public transport.”
- Delhi High Court, WP (C) No. 380/2012

JULY 2019

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City and congestion flock together!

However, economic development also brings about better travel infrastructure which facilitates uncongested mobility. Mumbai, with highest per capita GDP among six megacities of India and highest volume of trip generation, has the lowest use of personal modes. This is because of historically well developed transport systems as a result of which public transport and para-transit adds up to 89% of all motorized trips in the city.

There is a popular view that urbanization and economic development lead to ever larger cities and increased rates of motorization, eventually leading to a complete gridlock. Data for the largest Indian cities does show a strong association between congestion and household access to motorized vehicles.



"Beyond a certain speed, motorized vehicles create remoteness which they alone can shrink. They create distances for all and shrink them for only a few. A new dirt road through the wilderness brings the city within view, but not within reach." - Ivan Illich

AUGUST 2019

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Whose invisible hand in congestion?

Congestion solicits a policy response that strives to strike a balance between urbanization and urban mobility. The focus should be on both public transport improvement measures and traffic demand management measures so that policy initiatives are not just a lip service but yield constructive results.

Traffic congestion is also a public policy issue and therefore a consequence of what is prioritized by the government.



“A Developed Country is not a place where poor have cars. It’s where the rich use Public Transportation” - Gustavo Petro

SEPTEMBER 2019

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Congestion as an aesthetic insult!

Any infrastructural development should be aimed towards enhancing the aesthetics of a city and the relation of humans with the built environment. The problem of aesthetics is best relieved by building height restrictions and carving out walkable streets and squares.

Over the years, verticality and congestion have come to be understood as enemies of good urban design. Any engineering or design solution cannot be divorced from its impact on the beauty and health of the city.



“The automobile has not merely taken over the street, it has dissolved the living tissue of the city. Its appetite for space is absolutely insatiable; moving and parked, it devours urban land, leaving the buildings as mere islands of habitable space in a sea of dangerous and ugly traffic.” - James Marston Fitch

OCTOBER 2019

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More is merrier, not for vehicles but for land use.

The trick comes down to building complete neighbourhoods. A complete neighborhood is one where people get most of their needs within walking distance which reduces motor traffic. A form of highly-connected street network (such as a street grid or an organic mesh) also helps as it distributes the load of traffic than funneling everyone through a few regional connections between the cities.

Segregated land uses adds more traffic and generates congestion. When everything of daily use is not within walking distance, there is a rise in the dependency on personal vehicles to commute for everyday needs.



“When you’re making a housing decision, you’re also making a decision on transportation.” – *Barbara Lipman*

NOVEMBER 2019

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Uncongested Urban Design

While roads are already serving a variety of road users, the conflict among them can be avoided by proper and equitable allocation of space following design guidelines. Urban design can be utilised to ensure better road connectivity and planning, increasing throughput by designing better and safer streets for all users.

Many Indian roads are multi-purpose public goods that serve a wide variety of use other than motorized transport like walking, parking, hawking, etc. And rightly so, it serves a variety of road users. However, at times these different uses come in conflict with each other.



"A street is a spatial entity and not the residue between buildings" - Rebecca Solnit

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