

# **Devising Innovative Solutions to Alleviate Traffic Congestion in Delhi** **with special focus on parking and traffic rule compliance**

India's urban growth has brought with it significant challenges, one of the most pressing being traffic congestion. Despite having one of the highest road densities globally and a modern Metro Rail system, Delhi ranks as the 44th most congested city in the world, according to the Annual Traffic Index 2023. On average, it takes 21 minutes and 40 seconds to travel just 10 kilometres in the city. This persistent congestion affects commute times, reduces economic and social productivity, impacts air quality, strains infrastructure, and diminishes the overall quality of life for residents.

## **Key Issues Contributing to Traffic Congestion in Delhi**

### **1. Rapid and Unplanned Urbanization**

- High population growth, driven by inbound migration, continues to place immense pressure on Delhi's transport infrastructure.
- The increasing reliance on private vehicles, coupled with insufficient public transportation, further compounds the issue.

### **2. Inefficient Traffic Management**

- Weak enforcement of traffic regulations leads to mismanaged intersections, inefficient signal systems, and poor lane discipline.
- Parking mismanagement and encroachments exacerbate congestion.
- Traffic management is also hindered by an overburdened and resource-strapped traffic police force.

### **3. Inadequate Road Infrastructure**

- Many roads in Delhi are narrow and poorly maintained, and construction activities often lack proper planning.
- Seasonal waterlogging in key areas, such as Minto Road and Dhaula Kuan Flyover, further intensifies congestion during the monsoon season.

#### **4. Impact on Air Pollution and Environment**

- Traffic congestion significantly contributes to air pollution. According to the Annual Traffic Index 2023, 200 kilograms of the 886 kilograms of carbon dioxide emitted annually by a single vehicle is directly attributable to congestion.
5. Delhi is already amongst the India's largest producer of greenhouse gas (GHG) emissions. Much of these emissions are a result of heavy traffic congestion.
  6. Currently, Delhi has about 45 buses per lakh residents, based on 2011 census data. This falls well short of the Ministry of Housing and Urban Affairs' benchmark of 60 buses per lakh population. In contrast, global cities like London, Hong Kong, Shanghai, and Seoul have far higher ratios, ranging from 69 to 90 buses per lakh, underscoring Delhi's gap in adequate public transit infrastructure, which has led to more private vehicles and thereby traffic congestion.

#### **Policy Interventions Already in Place**

##### **1. Robust Public Transport**

- The expansion of the Delhi Metro network, along with extensive Bus network, has significantly improved mobility across the city, providing better connectivity and easing traffic congestion.

##### **2. Delhi-Meerut Regional Rapid Transit System (RRTS)**

- Developed by the National Capital Region Transport Corporation (NCRTC), the RRTS aims to enhance long-distance connectivity, offering commuters a safe, fast, and comfortable mode of public transport for travel between Delhi and Meerut.

##### **3. Electric Buses:**

- Delhi has inducted a fleet of 2000 electric buses, making it third largest in the world after Shenzhen and Santiago. By end of the next year, it is estimated to have 8000 electric buses.

#### 4. Infrastructure Improvement

- Ongoing construction of Urban Extension Roads (UERs), peripheral expressways, and road elevation and widening projects are aimed at easing traffic bottlenecks and improving overall road infrastructure in the city.

#### 5. Promotion of Electric Vehicles (EVs)

- Policies like FAME and the Delhi EV policy, along with subsidies for electric vehicles and the adoption of electric buses, are intended to mitigate the environmental impact of traffic congestion and support the transition to cleaner, more sustainable transportation.

#### Call for Innovation

Despite extensive measures, the solutions to Delhi's traffic congestion lay in a multi-pronged approach which integrates existing policies and infrastructure with innovative and technological measures. Further, it is important to design these steps keeping Delhi's urban agglomeration in mind, as huge amounts of traffic flows from the satellite cities of the region.

1. **Smart Parking System:** Utilising technology to optimize parking space, provide real-time availability, and ease vehicle movement, an essential innovation for efficient urban mobility.
2. Devising **Intelligent Traffic Management System** with salience towards parking management and enhanced compliance of traffic rules to reduce traffic congestion
3. Optimise traffic flow using digital platforms, map services, data analytics and other emerging technologies like AI, geospatial mapping, etc to prevent traffic hotspots.
4. Promotion of people centric and pedestrian and cyclist friendly mobility systems
5. Integrated, qualitative and seamless connectivity for commuters to reduce reliance on private means of transport
6. Road engineering and capacity building of traffic personnel
7. Building on Delhi's extensive road and metro network while reimagining efficient optimization of the same

## **Problem Statement:**

***“What innovative, technology-driven and pro-citizen solutions can be developed and integrated to existing policies to decongest traffic in Delhi and enhance seamless connectivity and mobility as core elements of Delhi’s urban evolution? Also, address and synergize these solutions with focus on parking management and compliance of traffic rules to bring forth a holistic decongestion policy for Delhi?”***

## **Additional Resources:**

### **1. Important Government Department/Institution Website Links –**

- a. Ministry of Housing and Urban Affairs - [Link](#)
- b. Transport Department, Government of NCT of Delhi – [Link](#)
- c. Delhi Traffic Police - [Link](#)
- d. NITI Aayog - [Link](#)
- e. National Institute of Urban Affairs - [Link](#)

### **2. Public Sources for Data and Insights –**

- a. Decongesting Traffic in Delhi Report – [Link](#)
- b. National Urban Transport Policy Report – [Link](#)
- c. Metro Rail Policy - [Link](#)
- d. Delhi EV Policy - [Link](#)
- e. Parking Management – [Link](#)
- f. Decongestion of Traffic Junctions - [Link](#)

### **3. Others –**

- a. ORF – [Link](#)
- b. Centre for Development Policy and Practice – [Link](#)